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CONFERENCE ABSTRACTS 2012

The continuum of education in medicine and the healthcare professions

SIFEM Lyon 1 UNIVERSITÉ DE LYON

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AMEE 2012
27-29 August, Lyon, France

Timetable of Sessions

Monday 27 August

Tuesday 28 August

Wednesday 29 August

1300-1530 Session 11 Plenary   Page 513

SESSION 1: Plenary
Monday 27 August: 0830-1000

1A: Plenary: Achieving the Continuum in Medical Education: Who says it cannot be done?

Lewis R First *(National Board of Medical Examiners, Philadelphia, USA)*

Despite the fact that medical training is theoretically designed to be a continuum that begins at an undergraduate level, extends through graduate training and goes on to include lifelong learning, the reality can be perceived as anything but continuous. In fact, much concern is raised about the fragmentation or silo-ing of the various levels of training and how this may hamper the ability to teach physicians to deliver the highest quality and most up-to-date care to patients. In this opening plenary session, Dr First will examine the continuum of medical education by considering the continuum as a "patient", diagnose its various maladies that are affecting its overall health and wellbeing, and provide a provocative treatment plan that will insure that the continuum doesn't just survive but thrives as we look toward the future.

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SESSION 2: Simultaneous Sessions
Monday 27 August: 1030-1215

2A Symposium: The globalization of medical education and its discontents

Ming-Jung Ho *(National Taiwan University College of Medicine, Taiwan)*
Brian Hodges *(The Wilson Centre, University of Toronto, Canada)*
Tina Martimianakis *(Department of Paediatrics, University of Toronto, Canada)*
Christophe Segouin *(University Paris 7, Medical School, France)*

Medical education is rapidly taking up the language, ideas and practices of globalization. Terms such as outsourcing, off-shoring, efficiency and profit have found their way into medical education. The result is the emergence of practices such as selling curricula, off-shoring medical schools, trade in health professionals and the development of profit-oriented medical education. In the analysis of globalization outside of medicine, significant concerns have been raised about some adverse effects of unfettered economic models including unevenly distributed benefits, failure to develop international regulatory mechanisms and the homogenization of diversity. All of these issues are relevant to, but rarely discussed in, medical education. The talks in this symposium open the door to a line of research that can shed light on these pressing issues.

2B Symposium: Developing Entrustable Professional Activities (EPAs) in the Procedural and Non-Procedural Specialties: Reflections and Insights

Olle ten Cate *(UMC Utrecht, The Netherlands)*
Carol Carraccio *(American Board of Pediatrics, USA)*
Robert Englander *(Association of American Medical Colleges, USA)*
M Douglas Jones *(Children's Hospital Colorado, USA)*
Fedde Scheele *(St Lucas Andreas Hospital Amsterdam, The Netherlands)*

EPAs connect competencies to practice. Since the introduction of the concept, several postgraduate specialty domains – OB/GYN, public health, psychiatry, pediatrics – embarked on a journey to define, implement and assess core activities in their domain. This symposium aims to compare and contrast approaches. After examples from pediatrics and OB/GYN we will discuss issues such as: Are there EPAs common to health professionals, regardless of discipline? What are differences/similarities between approaches to EPAs for procedural versus non-procedural specialties?

2C Short Communications: Evidence Based Medicine and Research

2C/1
Evidence-base practice content, pedagogical methods and assessment of learning: A Mapping exercise in an Occupational Therapy professional Masters program

Aliki Thomas *(McGill University, School of Physical and Occupational Therapy and Center for Medical Education, Montreal, Canada)*
Bernadette Nedelec *(McGill University, School of Physical and Occupational Therapy, Montreal,Canada)*
Cynthia Perlman *(McGill University, School of Physical and Occupational Therapy, Montreal, Canada)*
Caroline Storr *(McGill University, School of Physical and Occupational Therapy, Montreal, Canada)*
Hiba Zafran *(McGIll University, School of Physical and Occupational Therapy, Montreal, Canada)*

(Presenter: Aliki Thomas, McGill University, Physical and Occupational Therapy and Center for Medical Education, 3654 Promenade Sir William Osler, Montreal H3G 1Y5, Canada, aliki.thomas@mcgill.ca)

Background: Occupational Therapy graduates are expected to demonstrate competence in Evidence-Based Practice (EBP). To date, available guidelines for designing, delivering and assessing EBP content in professional programs are scarce.
Summary of work: We relied on innovative methodologies grounded in Instructional Design and Cognitive Science literature that emphasize the identification and development of a trajectory of learning and competency development to conduct a mapping exercise aimed at identifying the nature, location, instructional methods, and evaluations related to EBP content.

Summary of results: Incremental exposure to EBP content was found across the curriculum paired with a range of teaching and assessment methods. Gaps such as lack of summative assessment of EBP knowledge and skills and the role of authentic learning opportunities for EBP competency acquisition emerged as important outcomes of the exercise. The exercise also enhanced curriculum review, supported faculty as they refined course-specific EBP content and lead to implementation of a summative end of program assessment of EBP.
Conclusions: Curricular mapping exercises based upon explicit methods for identifying gaps and redundancies can be used to systematically review and refine the EBP content in professional programs.
Take-home messages: Curricular mapping exercises that support the review and revision of EBP content in professional curricula ensure that graduates will be competent evidence-based practitioners.

2C/2
Towards the end of the French resistance to EBM?

Delphine Maucort-Boulch (*Université Claude Bernard Lyon 1, UMR CNRS 5558, Villeurbanne, France*)
Jean-Pierre Boissel (*Hospices Civils de Lyon, Service de Pharmacologie Clinique, Lyon,France*)
Denis Vital-Durand (*Hospices Civils de Lyon, Service de Médecine Interne, Lyon, France*)
Guy Llorca (*Université Claude Bernard Lyon 1, Laboratoire de thérapeutique, Villeurbanne, France*)
<u>François Gueyffier</u> (*Université Claude Bernard Lyon 1, UMR CNRS 5558, Villeurbanne, France*)

(*Presenter:* François Gueyffier, Université Claude Bernard Lyon 1, UMR CNRS 5558, 43 bd du 11 novembre 1918, Villeurbanne 69622, France, francois.gueyffier@chu-lyon.fr)

Background: Defined as "the integration of best research evidence with clinical expertise and patient values" by David Sackett, Evidence Based Medicine (EBM) largely contributed to the change of paradigm that occurred during the past two decades. In the early 2000s, a reform of medical training in France applied that was an opportunity to officially introduce EBM in the curriculum.
Summary of work: Two surveys were performed in order to explore the way EBM paradigm was taken into account in French medical teaching before and after the reform. The four medical schools in Lyon (France) were included in the surveys, respectively before and after the reform of the medical studies in France.
Summary of results: The surveys showed that EBM integration is an ongoing process that still faces conceptual difficulties and thus requires time.
Conclusions: Reporting results of those qualitative studies offers the opportunity to bring thought on EBM in medical studies and medical practice.
Take-home messages: EBM integration faces conceptual difficulties in France and thus requires time.

2C/3
Successful coordination of clinical and research training for clinician investigators: the clinician investigator program

<u>M Kennedy</u> (*Royal College of Physicians & Surgeons of Canada, Education, Ottawa, Canada*)
C Hayward (*McMaster University, Pathology & Molecular Medicine, Hamilton, Canada*)
D Danoff (*University of Ottawa, Medicine, Ottawa, Canada*)
U Bond (*Royal College of Physicians & Surgeons of Canada, Education, Ottawa, Canada*)

(*Presenter:* M Kennedy, Royal College of Physicians & Surgeons of Canada, Education, 774 Echo Drive, Ottawa K!S 5N8, Canada, mkennedy@royalcollege.ca)

Background: Clinician scientists are important for "transforming science into medicine". For more than 10 years, the Royal College of Physicians & Surgeons of Canada (RCPSC) has supported a Clinician Investigator Program (CIP) for postgraduate trainees. A 10-year review identified the strengths and limitations of this program. This study may have applicability to other countries seeking to enhance their clinician scientist programs.
Summary of work: A 10-year review of the CIP was conducted using qualitative and quantitative methods. Evaluation included key characteristics of successful programs as well as demographics and outcomes of current and past trainees.
Summary of results: Over 10 years the number of accredited CIPs increased from 2-10 and the number of yearly applicants increased from 24-50. The CIP provides integration between clinical and research training. Although the CIP requires additional training years, graduates of the program felt the experience enabled them to combine clinical and research perspectives. Many graduates successfully transitioned to faculty with research commitments. Challenges, such as secure funding, were identified.
Conclusions: Graduates of CIPs were more likely to remain in academic environments, publish research papers, and have ongoing research funding.
Take-home messages: Continuing development of clinician investigators is valuable. A structured CIP incorporated into residency training can successfully enhance this goal.

2C/4
Medical Research Program Paper (KSAU-HS)

<u>M Abdalla</u> (*King Saud bin Abdulaziz University for Health Sciences, Medical Education, Riyadh, Saudi Arabia*)

(*Presenter:* Mohamed Abdalla, King Saud bin Abdulaziz University for Health Sciences, Medical Education, Department of Medical Education, Medical College, Riyadh Box 22490 Riyadh 11426, Saudi Arabia, drmoh@yahoo.com)

Background: The College of Medicine, King Saud bin Abdulaziz University for Health (KSAU-HS) Sciences (KSAU-HS), Riyadh, Saudi Arabia is applying a 4-year Problem Based Learning (PBL) web-based graduate medical program adopted from University of Sydney, Australia. Although research is part of the University of Sydney medical curriculum, KSAU-HS developed a structured research program for each of the stages of the 4-year medical curriculum.
Summary of work: Each student enrolled in the medical program at the College of Medicine of the KSAU-HS is required to carry out a research project under the supervision of one of the faculty members. Students are encouraged to publish their research papers and participate at national and

international conferences. The objective of this paper is to provide a description of the research program in KSAU-HS and to showcase its outcomes in terms of number of presentations at national and international conferences, as well as papers submitted for publications in medical journals.

2C/5
Development and implementation of an MD-PhD program at the Faculty of Medicine of the National University of Mexico (UNAM): Challenges of integrating research training with the medical curriculum

Ana Flisser-Steinbruch (*UNAM Faculty of Medicine, Microbiology and Parasitology, Mexico City, Mexico*)
Melchor Sanchez-Mendiola (*UNAM Faculty of Medicine, Medical Education, Mexico City, Mexico*)
Enrique Graue-Wiechers (*UNAM Faculty of Medicine, Dean, Mexico City, Mexico*)

(*Presenter:* Melchor Sanchez-Mendiola, UNAM Faculty of Medicine, Medical Education, Facultad de Medicina UNAM. Edif. B, 3er Piso, Ave. Universidad 3000, Circuito Escolar, C.U., Mexico City 04510, Mexico, melchorsm@gmail.com)

Background: The training of physician-scientists is an important task in current healthcare. MD-PhD programs and translational research have been proposed as a solution to the problem of bench-to-bedside knowledge gap. The Faculty of Medicine of UNAM in Mexico is the largest medical school in Latin America, and initiated a new MD-PhD curriculum.
Summary of work: UNAM's Faculty of Medicine in partnership with UNAM's Institute of Biomedical Research, developed the first MD-PhD program in our country. A novel curriculum was designed that blended the medical degree and PhD programs, including courses related to research methodology, critical appraisal, statistics, ethics, and research experiences in the biomedical, sociomedical and clinical areas. The program duration will be 8 years.
Summary of results: The Combined Plan of Studies in Medicine (PECEM, for its initials in Spanish) was approved by the University Council, and started in August 2011 with its first class of 13 students. They were selected from 1,200 students. Physician-scientists and basic science researchers were recruited as professors. Students and tutors are highly satisfied with the program.
Conclusions: An innovative MD-PhD program was started successfully in Mexico, its main goal is to train physician-scientists that are competitive globally and to increase translational research.
Take-home messages: The challenge of initiating an MD-PhD program in a developing country is complex and exciting.

2C/6
Using a Teach the Teacher-program to implement a new EBM-based teaching method for residents and resident teachers
Tanja van Kempen (*LUMC, OEC, Leiden, Netherlands*)
P.J. Dörr (*MC Haaglanden, Gynecology, Den Haag, Netherlands*)
F.W. Dekker (*LUMC, Clinical Epidemiology, Leiden, Netherlands*)

(*Presenter:* Tanja van Kempen, LUMC, OEC, boreelstraat 29a, Rotterdam 3039 WH, Netherlands, t.van_kempen@lumc.nl)

Background: To create (more) attention for Evidence Based Medicine (EBM) in residency programs, the method Critical Appraisal of a Topic (CAT) was made compulsory in all postgraduate medical education in the Netherlands in 2011. A CAT is a short summary of evidence on a topic of interest and completely new. Due to the large number of residents/teachers that had to be trained, we had to develop a strategy to implement the CAT effectively.
Summary of work: Instead of designing more education for residents we decided to develop a Teach the Teacher-program. This fits into our vision that residency education must be situated in the workplace as much as possible. To establish a shared interpretation of the CAT, we chose a 7-step-method. We invited so-called CAT tutors, resident teachers who have affinity with EBM for the 2 day Teach the Teacher-program. This program combines updating knowledge, learning new skills and discussing the educational implications.
Summary of results: The Teach the Teacher-program has already been followed by 20 resident teachers and received good evaluations.
Conclusions: We are performing further research into the effect of the program on the attitude of CAT tutors towards EBM in the clinic. We also take their self-efficacy into account and how much education they organized for the residents.
Take-home messages: We will discuss the usability of the training and show the first results of the research.

2D Session Plénière Francophone

Présidence: JL Debru
La première partie de cette session plénière sera consacrée à la présentation des travaux et de l'état de la réflexion des groupes d'action prioritaires de la SIFEM par leurs responsables :
Rôle de la recherche en pédagogie médicale dans l'innovation pédagogique(T Pelaccia)
Responsabilité sociale des facultés de médecine (J. Ladner)
Place de la formation à la communication dans le cursus de médecine

Une table ronde sur les grands enjeux de la pédagogie médicale dans le monde francophone pour les 10 prochaines années sera ensuite proposée.
Y participeront : le président du conseil pédagogique de la CIDMEF, les représentants du forum de pédagogie du Québec, du collège royal des médecins et chirurgiens du Canada, des médecins généralistes ou de famille, des doyens français, des étudiants, des professionnels de la santé non médecins,…

2E Short Communications: Clinical Assessment

2E/1
Balancing authenticity and consistency: A mixed methods, multi-source investigation of a long-case oral exam in clerkship

Beth-Ann Cummings (*McGill University, Department of Medicine and Centre for Medical Education, Montreal, Canada*)
Arno Muijtjens *(Maastricht University, School of Health Professions Education, Maastricht,Netherlands)*
Meredith Young (*McGill University, Department of Medicine and Centre for Medical Education, Montreal, Canada)*

(*Presenter:* Beth-Ann Cummings, McGill University, Department of Medicine and Centre for Medical Education, 3655 Promenade Sir William Osler, McGill University Faculty of Medicine, 6th Floor Dean's Office, Montreal, Quebec H3G 1Y6, Canada, beth.cummings@mcgill.ca)

Background: Long-case oral examinations are less reliable than more standardized examinations, and are rarely used in high-stakes settings. However, clerkship rotations are considered lower-stakes, and assessment should address performance in an authentic clinical setting. Therefore, we examined the utility and acceptability of a long-case oral examination within a clerkship assessment program.
Summary of work: A mixed methods, multi-source design was used. Student (n=179) assessment data for all components (clinical evaluation and written and long-case oral examinations) of an internal medicine clerkship assessment program were analyzed. We conducted a qualitative and quantitative survey of stakeholders (undergraduate education committee (n=5), clinical teachers (n=27), and students (n=19)), investigating perceptions of the benefits and drawbacks of the clerkship long-case oral examination.
Summary of results: There were moderate correlations between the oral examination and other assessment components (clinical evaluation: r(178)=.34, p<.001; written examination: r(178)=.24, p<.005), with between-training-site differences in mean rated performance (F(3, 175)=3.3, p<.05). Stakeholders recognized the non-standardization, yet expressed enthusiasm for the authenticity of witnessing student performance at the bedside of a real patient.
Conclusions: Despite recognized challenges associated with long-case oral examinations, stakeholders value authentic observation of student performance.
Take-home messages: As part of a multifaceted assessment program, in a lower-stakes setting, long-case oral examinations bring valued authenticity, despite challenges to reliability.

2E/2
"I'm no teacher": Exploring the perception of Radiation Therapists in assessing clinical competence of undergraduate students within an academic clinical setting

Kieng Tan (*Princess Margaret Hospital, Radiation Medicine, Toronto, Canada*)
Krista Dawdy (*Odette Cancer Centre at Sunnybrook, Radiation Oncology, Toronto,Canada)*
Lisa Di Prospero (*Odette Cancer Centre at Sunnybrook, Radiation Oncology, Toronto, Canada)*

(*Presenter:* Lisa Di Prospero, Odette Cancer Centre at Sunnybrook, Radiation Oncology, 2075 Bayview Avenue, Toronto M4N 3M5, Canada, lisa.diprospero@sunnybrook.ca)

Background: Anecdotal feedback identified challenges in clinical competency assessment due to variation in who, how and context. A survey was distributed to gain insight into the current state of assessment hypothesizing that recommendations could be developed to improve "standardization" and formalize a process.
Summary of work: Radiation Therapists (N=200) from two affiliated clinical sites were surveyed. The survey was divided into three principal themes on assessment of clinical competence: 1) who completes it; 2) how is it assessed; and 3) what measures are utilized.
Summary of results: All respondents were aware that clinical teaching was part of their portfolio; however, only 60% enjoyed teaching students. 55% rated themselves as very comfortable assessing competence. 93% were aware of documentation and support on how to evaluate with only 11% utilization. All collaborate with team members and slightly less with the clinical educators. 87% defined successful competence as sustainability over a defined period of time and varied clinical cases; measuring both clinical knowledge and application (97%).
Conclusions: Processes surrounding the assessment are congruent among clinical teachers supporting its reliability. Enhanced collaboration with clinical educators in both support and training will increase their validity.
Take-home messages: Focus should be placed on training the assessor rather than controlling the context.

2E/3
Numerical transparency of component anchor values to examiners inflates clinical oral examination marks in an Internal Medicine clinical clerkship

L Devine (*University of Toronto, Deparament of Medicine, Toronto, Canada*)
R Gupta *(University of Toronto, Department of Medicine, Toronto, Canada)*
L Stroud (*University of Toronto, Deparament of Medicine, Toronto, Canada)*
E Lorens *(University of Toronto, Department of Medicine, Toronto, Canada)*
S Robertson *(University of Toronto, Department of Medicine, Toronto, Canada)*
D Panisko *(University of Toronto, Department of Medicine, Toronto, Canada)*

(*Presenter:* Luke Devine, University of Toronto, Department of Medicine, c/o Mount Sinai Hospital, 600 University Avenue - Suite 427, Toronto M5G1X5, Canada, ldevine@mtsinai.on.ca)

Background: Faculty assessments of student clinical performance are frequently limited by rater reluctance to report poor performance.
Summary of work: Summative student assessment in the Toronto Internal Medicine clerkship includes a patient case-based structured oral examination. It is scored by faculty examiners who use an instrument with a 5 point scale and verbal anchors for each domain. Grades were generated by assigning numerical scores for each point on the scale; these were hidden from examiners in 2010-11, who assessed 226 students. To increase transparency, numerical scores were

added to the verbal anchors on the instrument in 2011-12, with 76 students examined to date.

Summary of results: With the addition of numerical values to the verbal anchors, mean student scores increased from 79.9% to 84.3% (p < 0.001). No significant change between groups was found in other assessment modalities used in the Internal Medicine clerkship. Subsection analysis of the exam components (data gathering, integration) is ongoing.

Conclusions: Providing examiners with explicit numerical values, in addition to verbal anchors, for items on a rating scale led to a significant increase in student grades on a clinical oral clerkship examination.

Take-home messages: Course committees must carefully consider the impact of numerical and verbal anchor rating scales on overall scores in clinical oral examinations.

2E/4
Using Generalisability Theory to optimise reliability in the design of a feasible finals clinical examination

T James Royle (*Warwick Medical School, Institute of Medical Education (Masters in Medical Education Programme), Coventry, United Kingdom*)
Colin Macdougall (*Warwick Medical School, Medical Teaching Centre, Coventry, United Kingdom*)
Gay P Fagan (*Warwick Medical School, Educational Development and Research Unit, Coventry, United Kingdom*)

(*Presenter:* T James Royle, Warwick Medical School, Institute of Medical Education , Gibbet Hill Road, The University of Warwick, Coventry CV4 7AL, United Kingdom, jamesroyle@doctors.org.uk)

Background: Clinical practical assessments are complex, with multiple sources of potential interrelated error variance (e.g. students exposed to differing cases or examiner pairings). Their design also requires balancing acceptable reliability with feasibility. To achieve this balance, a UK medical school used a finals examination with a sequential design (all students observed on four long-cases, with borderline students proceeding to four more).

Summary of work: To assess reliability, a generalisability (G) study analysed the 2009 cohort's results, estimating the error variance of contributing facets. A D-study modelled the G-coefficient with a range of cases and examiners (per case). Sequential test functioning was assessed by comparison of extended test candidates' rankings at the end of stage 1 and the complete test.

Summary of results: The overall G co-efficient was 0.58 for 4 cases. The D-study indicated that the reliability would improve with 8 cases (0.73). Both failed candidates were ranked (after stage 1) in the bottom 7 of 44 extended candidates.

Conclusions: Modeled reliability was relatively low over 4 cases, but this may not be critical for clearly passing candidates. The sequential design raises the reliability to a satisfactory level across 8 cases for borderline candidates.

Take-home messages: Generalisability studies are valuable for balancing reliability and feasibility in complex clinical practical assessments.

2E/5
A multi-institution study to establish the validity of scores generated by new structured clinical

observation tool designed to measure pediatric patient encounter skills

Daniel West (*University of California, San Francisco, Pediatrics, San Francisco, United States*)

(*Presenter:* Daniel West, University of California, San Francisco, Pediatrics, 505 Parnassus Ave, Box 0110, San Francisco, CA 94143-0110, United States, westdc@peds.ucsf.edu)

Background: Available tools to measure trainees' skill in patient encounters lack validity for encounters with children and psychometric properties for high-stakes decisions.

Summary of work: The purpose was to establish validity of scores from a new pediatric-specific structured clinical observation tool (PedSCO). Items and rating scale for the PedSCO were developed by expert panel review (Delphi method). From July 2010-January 2012, PedSCO was tested at 5 pediatric residency programs in the USA.

Summary of results: PedSCO contains 30 items divided among 4 domains: medical interviewing (MI)(8 items), physical exam (PE)(6 items), decision making (DM)(7 items), and patient counseling (PC)(9 items) rated on 7-point scale from novice to expert. We analyzed 393 observations of 166 resident physicians. Confirmatory factor analysis supported our 4-domain model. Mixed effects regression model confirmed that third-year residents (R3) scored higher than first-year residents (R1) in all domains [domain, coefficient (95% confidence interval)] [MI, 1.42 (1.02-1.83); PE, 1.41 (0.97-1.85); DM, 1.58 (1.24-1.92); PC, 1.56 (1.21-1.92)]. A 2-facet (item-occasion) Generalizability/Decision study indicated that administration between 3 (MI/DM) and 8 (PE/PC) occasions yielded G-coefficients >0.79.

Conclusions: Scores generated by the PedSCO in pediatric patient encounters are valid.

Take-home messages: Depending on the domain, administration of PedSCO on 3-8 occasions yields a valid score for high-stakes decisions.

2E/6
Internship in Turkey: Is it the preparatory stage to be a physician or a stage of preparing to the specialty exam?

S Turan (*Hacettepe University Faculty of Medicine, Department of Medical Education and Informatics, Ankara, Turkey*)
S Üner (*Hacettepe University Faculty of Medicine, Department of Public Health, Ankara,Turkey*)

(*Presenter:* S Turan, Hacettepe University Faculty of Medicine, Department of Medical Education and Informatics, Hacettepe University Faculty of Medicine Department of Medical Education and Informatics, Sihhiye, Ankara 06100, Turkey, sturan@hacettepe.edu.tr)

Background: The aim of the study is evaluating the progress of studying to speciality exam of interns, their views about and their anxiety due to the exam.

Summary of work: A cross-sectional study was conducted with interns (6th grade students) of a medical faculty in Turkey. A questionnaire queried interns' health status, academic achievement, views about specialty exam and their anxiety due to this exam. The data collection tool of the study

also included the Trait Anxiety Inventory to identify the interns' long-standing anxiety level. Multi-linear regression analysis modeling was used to identify significant predictors of trait anxiety level.

Summary of results: A total of 210 interns were included in the survey. The average duration of exam preparations was 16.8 months and 14.3 hours per week. When their academic achievement increased their study hours increased too. Students health status, academic achievement, their speciality exam anxiety and their studying time indicated a meaningful relationship with trait anxiety scores (R=0.46, R2=0.21, p<0.001). The most important variable relative to trait anxiety was health status and speciality exam anxiety.

Conclusions: Interns spent appreciable time for studying for the specialty exam during their internship period. Health status and speciality exam anxiety were related to their trait anxiety level.

Take-home messages: Internship curriculum, requirements and timing to entire speciality exam should be re-organized.

2E/7
Does self-assessment influence self-regulated learning and does learning change self-assessment?

Larry Gruppen (*University of Michigan Medical School, Medical Education, Ann Arbor, United States*)
Nora Fitzgerald (*University of Michigan Medical School, Medical Education, Ann Arbor, United States*)
Mary S. Oh (*University of Michigan Medical School, Medical Education, Ann Arbor, United States*)
Cyril M. Grum (*University of Michigan Medical School, Internal Medicine, Ann Arbor, United States*)

(*Presenter:* Larry D Gruppen, University of Michigan Medical School, Medical Education, G1113 Towsley Center, Dept of Medical Education, University of Michigan Medical School, Ann Arbor 48108-5209, United States, lgruppen@umich.edu)

Background: In spite of research on self-assessment accuracy, little is known in medical education about how self-assessments interact with self-regulated learning. This study examines how student allocation of learning time relates to self-assessed strengths and weaknesses.

Summary of work: 173 3rd year US medical students on a internal medicine rotation clerkship reported their self-assessed strengths and weaknesses in diagnosing 13 common clinical conditions at the beginning of the clerkship and again at the end. At the end of the clerkship, they also self-reported their allocation of self-regulated learning time among these conditions.

Summary of results: The mean correlation between pre- and post-clerkship diagnostic self-assessments (0.23) suggested that learning on the clerkship modified students' self-assessments. An even smaller mean correlation between pre-clerkship self-assessment and self-directed learning time (0.12) indicates that student allocation of learning time is influenced by factors other than perceived strengths and weaknesses. However, the moderate mean correlation between learning time and the change in self-assessed strengths (0.30) is evidence that spending more learning time improves self-assessed strength in a given topic.

Conclusions/Take-home messages: Self-directed investment of learning time is influenced only modestly by self-assessments. Other factors need to be investigated as well.

2F Short Communications: Clinical Reasoning

2F/1
Processes of diagnostic reasoning in novice medical students

Ruth Sutherland (*University of Melbourne, Medical Education Unit, Melbourne, Australia*)
Geoff McColl (*University of Melbourne, Medical Education Unit, Melbourne, Australia*)
Agnes Dodds (*University of Melbourne, Medical Education Unit, Melbourne, Australia*)

(*Presenter:* Ruth Sutherland, University of Melbourne, Medical Education Unit, Level 7, Medical Building, Grattan Street, Parvkille, Melbourne 3010, Australia, r.sutherland@unimelb.edu.au)

Background: There is little known about how novice students approach diagnostic problem solving during a medical interview. Previous research on diagnostic reasoning has investigated novices' written diagnostic reasoning skills or experts' reasoning during an interview with a patient. We used data generated by the stimulated recall technique to examine novices' diagnostic reasoning skills during an interview with a simulated patient (SP).

Summary of work: Thirty second year students were videotaped while interviewing a simulated patient. Immediately after the 8 minute interview, the student reviewed the video-recording with the examiner, who stopped the recording every two minutes to explore the student's reasoning using stimulated recall. Students' commentaries were audio-taped and their hypotheses and diagnostic inferences were coded.

Summary of results: The participants demonstrated four hypothesis generation patterns: linear, convergent, diamond (divergent then convergent) and cross (convergent then divergent) and applied both analytic and non-analytic reasoning. There was wide variation in the number of inferences used by students to support a hypothesis. The majority came to the correct conclusion but by very different paths.

Conclusions/Take-home messages: Novice students use a variety of pathways to solve a diagnostic problem during an interview. We are planning further research to investigate how these patterns of problem solving relate to diagnostic accuracy.

2F/2
Development of two instruments to evaluate clinical reasoning in Ob/Gyn interns at the Universidad de Chile Medical School. A preliminary study

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Carlos Brailovsky (*The College of Family Physicians of Canada, Toronto, Canada*)

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Background: Development of clinical reasoning (CR) evaluations in Medicine is challenging. Still, its certification is of the utmost importance. The Script Concordance Test (SCT) indirectly compares experts and novices` "illness-scripts" by presenting them with undefined clinical situations on which they have to make clinical decisions. The student`s level of CR is inferred by comparing his/her results with results of an expert panel. Even though SCT has been extensively validated, it measures the decision-making step of the CR competence but does not consider other steps that are equally important such as information gathering. On the other hand, clinical oral exams were considered the gold standard to evaluate CR. However they have been long discredited for their lack of reliability and standardization.

Summary of work: Our aim on this project was to develop two instruments to evaluate CR in different ways for Obstetrics/Gynecology interns at the Medical School of Universidad de Chile, namely, SCT and Standarized Oral Exam (SOE). The 7 interns who finalized their mandatory 11 weeks Ob/Gyn rotation sat both exams.

Summary of results: Both instruments were found to be valid, reliable, with good discriminating ability and acceptance.

Conclusions: Thus, the SCT and SOE developed here are recommended for further investigation and possible future application in Internships.

Take-home messages: Valid and reliable oral and written examinations can be developed to evaluate CR.

2F/3
Developing a dual training model to teach clinical reasoning in undergraduate medical education in Japan

Yuka Urushibara *(Jichi Medical University, Department of General Medicine, Shimotsuke, Japan)*
Harumi Gomi *(Jichi Medical University, Center for Clinical Infectious Diseases, Shimotsuke,Japan)*
Reiko Mochizuki *(Jichi Medical University, Department of Emergency Medicine, Shimotsuke, Japan)*
Koichi Takeda *(Jichi Medical University, Department of General Medicine, Shimotsuke, Japan)*
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Background: Clinical reasoning is a core competency for medical students and residents. Teaching promotes deeper learning of a subject. A resident-led, faculty-supervised, weekly one-hour session for clinical reasoning for fourth year students has been implemented since 2010 in the curriculum.

Summary of work: Students and residents were simultaneously trained with a newly developed instructional format. A small group, interactive, case-based discussion was provided for fourth year students. Residents were given the roles of case-presenter, discussion facilitator and scribe. An experiential learning model of the preparation-practice-reflection cycle was used to improve residents' skills in each role.

Summary of results: Through reflection, residents and faculty shared perceptions of the group dynamics and quality of discussion among students, with formative feedback regarding each role. Residents learned multiple skills such as how to define learning objectives in advance, how to facilitate a discussion effectively, how to pace the session efficiently, and how to activate prior knowledge and ask adaptive questions to students. Students learned a great deal from the residents.

Conclusions: A dual training model to teach clinical reasoning for students and residents is successful and effective.

Take-home messages: A resident-led, faculty-supervised session for clinical reasoning among students has significant educational value for both students and residents.

2F/4
The effect of clinical experience on the development of clinical reasoning

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Background: This study aims to investigate differences in the development of clinical reasoning in the three models of clinical experience in the third year of medical course at Flinders University, Adelaide; a tertiary hospital program, a rural community longitudinal program and an urban community longitudinal program. Previous research indicated qualitative differences in clinical experience in the three models.

Summary of work: 34 third year students from the three models participated in a clinical reasoning test (CRP) previously validated by Groves et al (2002).

Summary of results: There was no significant difference between the mean CRP scores of students in the three models. However, after taking into account individual differences in performance in a previous OSCE, the differences in CRP scores between the groups were significant.

Conclusions: The differences in CRP scores may be a result of the different clinical experience in the three models but further research is required for a more definitive statement.

Take-home messages: Different models of clinical experience can result differences in the development of clinical reasoning

2F/5
Extract Expertise of problem-solving in Traditional Chinese Medicine

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Background: Chinese Medicine has been considered subjective, and having a wide range of diversities in solving patients' problems. This study is to extract the expertise on clinical problem-solving from experts.

Summary of work: Using a think-aloud interview, five cases were used to trigger experts' thoughts. With minimal initial information, the experts were encouraged to ask questions and verbalize on whatever thoughts of reasoning came to their minds. Participants were three experts. The authors identified the involved concepts/facts and mapped for their sequences, relationships and the categorizations. The problem solving strategies were categorized into three: (1) guessing; (2) non-analytical: pattern recognition, one-rule/belief/common sense model; and (3) analytical: hypothetic-deductive reasoning, scheme-inductive reasoning.

Summary of results: The experts applied scheme-inductive approach in all the five case. They always probed both the "target problem" and the pathogenesis of individual's "root pattern" plus external/internal factors. For target problems, experts started with the common inquiry on chronicity and associated symptoms and followed by case-specific components. The "root" patterns that identify the function of human organs are about Yin/Yang, Cold/Heat, Qi/Blood, and Deficiency/Excess.

Conclusions: To enhance teaching and learning, there is a need to provide many cases in wide variety for practicing "target problem-solving", and to offer lots of deliberated practices for "root pattern" recognition.

Take-home messages: Experts in Chinese Medicine used scheme-inductive approach in reasoning, and treated both the "target problem and the pathogenesis of individual's "root pattern".

2F/6
Assessment of Diagnostic Thinking

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Background: Successful problem solving requires proficiency in clinical reasoning. Following the introduction of a new curriculum we were interested to measure the diagnostic thinking of our students and to examine its relationship to end of year assessment.

Summary of work: Following ethical approval, year 2 – year 5 undergraduate medical students (n=457) were invited to complete the Diagnostic Thinking Inventory. This data was merged with assessment data for all students completing the survey. Assessment data comprised written tests (MCQ and essay), clinical examinations (OSCE and long/short cases) and end of year total score, inclusive of portfolio. Data were entered into SPSSv18. Mean scores across years were

compared using Mann Whitney test and Spearman correlation coefficients were calculated for end of year assessments.

Summary of results: 325 students completed the survey (response rate 71%). Overall diagnostic thinking inventory score was 173.38 (SD 17.98), flexibility subscale 88.31 (SD 9.91), structure subscale 85.06 (SD 9.57). There was a significant increase in DTI scores over the 4 years measured (Year 2 mean DTI 171.04, SD 18.09; Year 5 mean DTI 178.29, SD 17.41, p <0.01). DTI scores showed weak correlation with end of year assessments. Written tests were more likely to correlate with DTI scores than clinical assessments.

Conclusions/Take-home messages: These data provoke consideration as to the extent to which we assess diagnostic thinking within current assessment practices.

2F/7
The Relationship Between Response Time and Diagnostic Accuracy

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Background: Psychologists theorize that reasoning involves two processes: System 1 (rapid, unconscious, contextual) and System 2 (slow, logical, rational). According to the literature, diagnostic errors arise primarily from System 1 reasoning, and are therefore associated with rapid diagnosis. This study investigated how accuracy is associated with time to diagnosis.

Summary of work: Immediately following the 2010 administration of the Medical Council of Canada Qualifying Examination (MCCQE; three test centres) Part II, participants diagnosed a series of 25 written cases of varying difficulty. Accuracy and response time (RT) were computed for each case.

Summary of results: Seventy-five Canadian graduates participated. Overall correlation between RT and accuracy was -0.54; accuracy strongly associated with more rapid RT. This negative relationship with RT held for 23/25 cases and when controlled for participants' knowledge (as judged by MCCQE scores). For 19/25 cases, accuracy was positively related to experience with that specific diagnosis. A participant's overall performance was significantly correlated with his or her performance on both the MCCQE Part I and II.

Conclusions: These results are inconsistent with clinical reasoning models that presume that System 1 reasoning is more error prone than System 2. These results suggest instead that rapid diagnosis is accurate and relates to other measures of competence and experience.

Take-home messages: Rapid diagnosis does not appear to be related to diagnostic error.

2G Research Papers: Questionnaires and Surveys

2G/1
Effect of changes in curriculum on medical students' motivation for learning

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Introduction: Motivated medical students shows favorable study behavior and increased learning (1). Loss of motivation may adversely affect learning and psychosocial adjustment and increase anxiety and depression. Nevertheless, the relationships between these factors in medical students have not been much investigated. We have previously reported decreased student motivation throughout their first year in medical school, which was attributed to content overload and the scarcity of activities closer to the medical practice. After the introduction of changes in the local curriculum, which included reduction in didactic lectures and early student contact with community health services, we aimed at measuring both intrinsic and extrinsic motivation for learning in first year medical students. Confounding aspects, such as anxiety and depression and self-perception of social adjustment were also evaluated.
Methods: The study was carried out in two consecutive years, including two groups of first year medical students: traditional (N=87) and reformed curriculum (N=63). Students from both groups were invited to answer to the Academic Motivation Scale (AMS), containing subscales for intrinsic (IM) and extrinsic (EM) motivation and for amotivation (2). Beck's Anxiety and Depression Inventories and the self-reported Social Adjustment Scale were also applied. All instruments had been validated after translation into student native language and shown to have reliable internal consistency. Instruments were applied by the end of the academic year. Data were analyzed using the "t" test and Cohen´s "d" for effect size of the intervention.
Results: Both groups were similar concerning demographic and social background. Reformed curriculum students showed significantly higher scores than students enrolled at the traditional curriculum concerning several of the AMS subscales. The effect size was greater for IM to accomplish things (d=0.67; 18.8±5.0 vs. 15.3±5.3), introjection (d=0.51; 13.9±5.7 vs. 11.1±5.3) AND to experience (d=0.50; 17.9±4.9 vs. 15.5±5.4) than for IM to know (d=0.48; 22.2±5.0 versus 19.7±5.4), and EM by identification (d=0.41; 23.5±3.6 vs. 21.7±4.9). No significant differences between groups were found in the subscales for EM by external regulation and amotivation. No differences between groups were found in regard to scores for social adjustment, depression and anxiety, although anxiety levels were higher in both groups.
Discussion: Reduction of content overload and the inclusion of activities closer to the clinical practice were associated to increased intrinsic and extrinsic student motivation for learning, without affecting other subjective measures such as social adaptation, anxiety and depression, which could influence learning motivation. These findings are similar to others showing that active, student-centered learning activities in health services are associated to increased student motivation and satisfaction. Higher anxiety levels in both groups could be due to data collection closer to end of the term exams, whose format were not affected by curricular changes. Our study was limited only to the junior year of a single institution. Moreover, whether increased motivation would persist during the following years and influence positively academic performance remain to be investigated.
Conclusions: Changes in the undergraduate medical curriculum aiming at reducing content overload and providing early student contact with community health services are associated to increased medical student motivation for learning.
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2G/2
How much preparation is done by applicants to medical school? Results from a survey of applicants to the University of Adelaide Medical School

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Introduction: In Australia, as elsewhere, the medical school selection process consists of a cognitive test (UMAT or GAMSAT), non-cognitive measures such as interviews and rating of academic performance. For medical schools it is important that the process selects the most suitable applicants for a medical career, with no systemic biases. This has become particularly important with the increasing social accountability for medical schools(1) and their aim of increasing applicant diversity. With more applicants than places, selection is a high stakes process for applicants. While some research has investigated the role of coaching or repeat testing on parts of the selection process, no research has attempted to assess the wash-back effect (2) on the selection process. This study aims to determine how much preparation applicants undertake when applying to medical school and the influence this has on the outcome of the process.
Methods: A questionnaire-based survey of 2150 applicants to the University of Adelaide Medical School course in 2007 was conducted. Logistic regression was used to determine which preparatory activities with the application stages were associated with a successful outcome.

Results: A response rate of 51% (1097/2150) was achieved. Applicants undertook a diverse range of preparatory activities and the odds of a successful outcome increased with each additional preparatory activity undertaken for the UMAT and the interviews. Activities included completion of example questions (83%); familiarisation with the process (67%), speaking with previous applicants (57%) and preparing and learning answers to possible questions (51%). For the UMAT preparatory activities significantly associated with the offer of an interview were: attendance of a training course by a private organisation (1.75 OR, 95% CI 1.35-2.27: P<0.001); use of online services of a private organisation (1.58 OR, 95% CI 1.23-2.04; P<0.001) and familiarisation with the process (1.52 OR, 95% CI 1.15-2.00; p=0.021). The interview activities significantly associated with an offer of a place were learning a personal resume (9.73 OR, 95% CI 2.97-31.88; P<0.001) and learning about the course structure (2.05 OR, 95% CI 1.29-3.26; P=0.022).

Discussion: The results indicate that applicants to medical school undertake a considerable amount of preparatory activities and that preparation contributes to a successful outcome. This suggests that as with other forms assessment, applicants their learning to suite the assessment (2). However, the most important issue raised by this research relates to equity. The activities that are most associated with a successful outcome may not be available to all applicants due to the cost or access, geographically or socially. The group most likely to have difficulties accessing successful activities such as commercial training courses, are the very group being targeted by medical schools to increase the diversity of their students. The question is how can a level playing field be created in such an environment?

Conclusions: This study has identified the scope and influence of preparatory activities on medical school selection. In doing so, it raises important questions about the equity of the current selection processes.

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2G/3

For love or money? The costs and benefits of teaching in general practice

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Introduction: As in many countries, Australia has increasing numbers of medical students, prevocational junior doctors, and postgraduate vocational trainees, who will place increasing demands on existing training posts, be it in the hospital or general practice. For general practice (GP), the increasing demand is likely to have a significant impact as teaching in GP utilises private businesses to undertake the teaching within a fee-for-service arrangement, impacting on the care they provide as well as on space, staff resources, time and income (1,2). Limited research has been undertaken on the financial costs of teaching in GP, and what does exist has focussed on the impact medical students have on a supervisor's productivity (3-5). This study aimed to identify the financial costs and benefits associated with teaching in a private GP setting for medical students, prevocational doctors and GP registrars and generate the cost-benefit of different models of teaching.

Methods: A financial analysis of teaching activities in GP across the three levels of training. Data were obtained from a survey of general practitioners in South Australia. Mean times per week were determined for all teaching activities and then converted to costs. Benefits consisted of teaching subsidies and income generated by the Registrar and junior doctors. Costs and benefits for a GP supervisor teaching at any one level of training were calculated and bootstrapped confidence intervals generated. Modelling the financial implications for a range of teaching options was then based on this costing framework.

Results: The net financial effect to practices for teaching varied across the training levels. Practices incurred a significant negative net financial effect from teaching medical students. The largest positive net financial effect per week came from teaching interns, although it was not significant. For vocational training there was a positive net financial effect per week to the practice at each training level.
In terms of models of teaching, there was a significant increase in net benefits to the practice when a GP taught two same level learners and when a senior registrar participated in teaching a prevocational doctor.

Discussion: This study shows a significant negative net financial effect for practices teaching medical students, while at the prevocational and vocational training levels, adequate levels of subsidies and income generated by the trainees help offset the costs of teaching. Our results suggest a review of teaching subsidies for undergraduate teaching is necessary. The modelling showed that gains could be made for a practice by implementing different teaching options, some of which involve GP registrars as teachers. This has implications for GP training and the role of teaching within the curriculum.

Conclusions: This is one of the first studies in Australia to identify the financial costs of teaching across the training continuum and the results can be used to inform the provision of appropriate support strategies for sustainable teaching in a GP setting in the future. The various models of teaching presented can be used by practices to self-determine the most appropriate model for their set of circumstances.

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2G/4
Burdened into the job – final-year students' empathic behavior and burnout

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Introduction: Empathy is a central quality in the daily patient-care [1]. The burnout-syndrome seems to be a potential factor that negatively influences the physicians' empathic behaviour [2]. So far, there are no studies in Germany that assess empathic behavior and degree of burnout in final-year students. The aim of the current study was 1. to investigate final-year students' self-reported burnout and empathy and 2. to find out if there is an association of burnout and empathy score or items concerning job satisfaction, workload, attitudes towards their medical training and occupational outlook and occupational self-efficacy.

Methods: 362 medical students at the end of the final year of the University of Heidelberg were surveyed using the Jefferson Scale of Physician Empathy Health Professional (JSPE-HP) and Maslach Burnout Inventory (MBI). The internal consistency (Cronbach's alpha) of JSPE and MBI subscales (MBI (emotional exhaustion, EE; depersonalisation, DP; personal accomplishment, PA) is in literature .81 for the sample of physicians (JSPE-HP), .815 (MBI-EE), .670 (MBI-DP), .746 (MBI-PA) [A;B] and in our sample .797 (JSPE-HP), .843 (MBI-EE), .611 (MBI-DP), .678 (MBI-PA). Additionally, the medical students answered items concerning job satisfaction, workload, attitudes towards their medical training and occupational outlook and occupational self-efficacy which were part of Karmed-study [3]. The statistical analysis was done with SAS 9.2 and the Pearson correlation coefficient was used to investigate the associations between the single scores or items.

Results: 127 medical students (82 f, 45 m; 26.8 years) answered the questionnaires which was in accordance with an overall response rate of 38%. The mean JSPE-score of all final-year students was 113.25 ± 10.21 ((Range: 20 (low empathy) -140 (high empathy)). Based on the three dimensions of burnout the students showed in all subscales of the MBI a moderate category of burnout. There was a significant association between a lower empathy score and a higher score of burnout concerning the subscale depersonalisation ($r=-.23$; $p=.010$) and personal accomplishment ($r=.20$; $p=.025$). The MBI correlated also negatively with the final-year students' job satisfaction and occupational self-efficacy.

Discussion: According to the surveyed students, they are affected by burnout-symptoms corresponding to a moderate category of burnout. Nevertheless they have high self-rated empathy scores like other students in Europe and the USA

[4,5]. Similar to an US-study [5] the students surveyed in this study who have a higher extent of burnout also have a lower self-rated empathy score. Furthermore those are less satisfied with their job and had lower scores of self-efficacy. This emphasises the importance to explore the final-year students' indication of burnout in time and to integrate more consequently courses of prevention in the curricula. In spite of a relatively low response rate the results are comparable with data reported in literature [2,4,5].

Conclusions: These are the first data for Germany/Europe of self-rated burnout and empathy of medical students in the final year. The findings suggest a need for an extensive medical outcome of burnout among medical students and indicate an opportunity for early intervention in students who are attached by burnout.

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2H Short Communications: Postgraduate Education

2H/1
Medical residents' perceptions of their competencies and training needs in health care management: an international comparison

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Background: Following an initial study that showed that Dutch medical residents perceived their management

competencies as inadequate, we decided to explore if these findings were similar to those of their peers in other countries. We also investigated whether the length of the implementation of a competency based curriculum influenced residents' perceptions of their management competencies.

Summary of work: Medical residents from Denmark, Canada and Australia were approached to participate in the study. The Dutch questionnaire was translated into English and sent to all respondents by email.

Summary of results: 719/2105 (34%) Danish residents, 177/500 (35%) Canadian residents and 194/1213 (16%) Australian residents responded to our survey. 51.3% of the Danish residents rated their negotiating skills to be insufficient. In Canada more than 50% scored their negotiating and coding and billing skills to be inadequate. In Australia, 42.1% of the residents gave negative ratings on the their negotiating skills and 49.1% found his/her knowledge on how their specialist department was organized to be insufficient. More than 70% of the residents in all countries reported a need for management training.

Conclusions/Take-home messages: The majority of all residents reported a need for management training, regardless of how long the competency based curriculum was implemented in their country.

2H/2
Foundation doctors' experience of mentoring

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Background: Mentoring is a powerful personal development and empowerment tool aiming to maximise an individual's learning potential within their professional career.

Summary of work: Regional questionnaire study to Foundation doctors (FYs) who are at the start of postgraduate training seeking their views about mentoring.

Summary of results: 64% (193/301) had a mentor as a student with 88% allocated by the medical school. Mentor rating was 3.4 (6 point Likert scale from very poor to very good). FYs felt having a mentor was important (Likert score 4.4) with female doctors scoring more highly (p 5). Commonly identified mentoring purposes were careers advice (99%), advice for difficulties (82%), specialty training preparation (70%) and motivation for learning and development (63%). Free text comments showed mentoring was confused with supervisors' roles and the need for choice of mentor.

Conclusions: FYs had equivocal mentoring experience during undergraduate training. Most would like a mentor but prefer to choose their mentor.

Take-home messages: Mentoring needs to be widely available for new doctors and be distinct from the roles of an educational or clinical supervisor.

2H/3
Should we limit the number of attempts for high stakes, licensing examinations?

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Background: Multiple arguments surround any desirable limit to the number of attempts (or 'resits') permitted in high stakes examinations. These relate to: measurement error, chance 'false positives', practice effects, item familiarity, candidates' 'human rights', and patient safety. Determinations are critical to patient care and individual careers. Sequential performance of individual candidates multiple re-sitting clinical examinations has not been reported. Such data should illuminate these discussions.

Summary of work: Consecutive scores of repeating candidates the MRCGP CSA since inception as a required high-stakes test were examined for the six groups resitting from two to seven times.

Summary of results: Mean sequential scores of the six re-sitting groups were plotted. For groups taking the assessment more than four times, after the fourth attempt no further significant improvement is seen towards the cohort reaching passing standard, though infrequent passes occurred.

Conclusions: Given published information on increasing measurement error with each attempt, only minimal confidence can be placed on the validity of these occasional successes. These data therefore argue for a general limit of four resits.

Take-home messages: The number of attempts should be limited to 4. If assessment bodies are instructed to offer more, serious consideration should be given to ways of establishing the passing score for repeat attempts.

2H/4
Infrastructure support for prevocational doctors: Medical Education Calculator

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Background: Trainee doctors require support, not only direct medical supervision, but also coordination and development of all aspects of their education and training.
In Australia this support comprises: 1.Medical Education Officers (MEO), for support and coordination of education and training of JMOs; 2.Directors of Clinical Training (DCT) - consultants who oversee training of junior doctors and liaise with clinicians on training issues.

Support for education of doctors in their early years needs to be maintained, as medical graduate numbers have tripled.
Summary of work: We have examined the infrastructure support for junior medical officers. We have developed and tested a "Medical Education Calculator" describing the support for JMOs. The calculator shows the "educationally justifiable" number of MEOs and DCTs required to support JMOs at each training site.
Summary of results:

Ratios	Interns	Residents
DCT	0.2/25	0.2/50
MEO	0.5/3	0.5/60
Admin	0.5/30	0.5/60
*DPME	0.5/50	0.5/100

*Directors of Postgraduate Medical Education
Conclusions: This calculator has highlighted the current infrastructure deficiencies for JMO training in Western Australia which are being corrected.
Take-home messages: Increased numbers of JMOs require increased support.

2H/5
How much surgical training do foundation doctors gain during foundation training?

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Background: The UK Foundation Programme provides the 'bridge' between undergraduate and specialist training, underpinned by curriculum competencies such as 'skin suturing' Given the continued demand for basic surgical skills amongst all hospital specialties and GP, we aim to evaluate how much surgical training Foundation trainees receive.
Summary of work: A questionnaire was distributed amongst Foundation doctors in the Trent Deanery. Results were collected and analysed.
Summary of results: Of the 86 trainees surveyed, all rotated through a surgical speciality and 54% spent 8 of 24 months in surgical posts; vascular and urology the most popular (18% each). 45% of trainees did not regularly attend theatre, 84% assisted whenever they did. Only 48% (n= 40) received basic surgical skills training (BSSt). 75% of these were taught by senior clinicians, 86% of these had one-off formal teaching, 68% informal teaching and 57% theatre-based teaching. 12% paid for BSSt (67% of these during first year). 66% wanted further BSSt; particularly suturing (52%), and knot-tying (47%).
Conclusions: Despite all trainees undertaking surgical posts, a large proportion do not attend theatre regularly, despite this being the best environment for surgical training. Most trainees do not receive BSSt.
Take-home messages: Trainees would appreciate further BSSt, particularly aimed at core curriculum competency.

2H/6
Surviving sepsis: What factors help or hinder junior clinical staff implementing best practice care bundles in an acute hospital setting?

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Background: National campaigns to raise awareness amongst clinical staff about early recognition and management of sepsis have had limited impact. Sepsis care bundles are implemented inconsistently, reasons for which are unclear and potentially detrimental to patient outcome.
Summary of work: This project explored factors that influenced application of 'best practice guidelines' by frontline staff when managing sepsis in the ward setting of a large UK acute Teaching Hospital. Individual interviews and focus groups were undertaken involving 24 individuals sampled from healthcare management, clinical governance, clinical practice and education. Reasons for inconsistent sepsis management were constructed thematically through a diligent multi-step process.
Summary of results: Junior clinical staff described difficulties applying core knowledge in practice, recognising their naivety in non-technical skills that underpin effective teamworking. Expectations of senior managers and clinical supervisors did not consistently acknowledge complexity and cultures that influence acute healthcare.
Conclusions: Curricula for healthcare professionals and senior staff leading, managing or supervising acute healthcare must acknowledge the influence of complexity and ambiguity in practice.
Take-home messages: Success or failure in implementing best practice and building organisational and individual resilience is a multifaceted issue which needs to be researched more thoroughly and take into account perspectives and expected educational outcomes of staff groups with different roles and responsibilities.

2H/7
Resident physician perspectives on continuity of care

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Background: The outpatient continuity clinic is a staple of internal medicine post-graduate programs in the US, yet continuity of care in these clinics is sub-optimal. Reasons for this discontinuity have been inadequately explored. We performed the first qualitative assessment to our knowledge of factors contributing to discontinuity in trainee ambulatory clinics.

Summary of work: Two hours of facilitated discussion were conducted among 18 small groups of residents at a large academic Internal Medicine training program. Discussion items asked residents to reflect on factors contributing to discontinuity in their practice and on potential mechanisms to attenuate these barriers. Inductive analysis was performed on transcribed notes to develop themes from which we were able to derive recommendations for improving continuity of care in the residency ambulatory clinic.

Summary of results: A total of 112 residents participated in the study. Key themes included an imbalance of clinic scheduling that favors acute access over continuity; clinic triage scripts that de-emphasize continuity; inadequate communication among providers regarding shared patients; inefficient use of non-physician care resources among trainees; and sub-optimal shared values between patients and providers regarding continuity of care.

Conclusions: These results lend important information that may be applied towards iterative programmatic changes to enhance continuity of care in resident clinics.

2I Short Communications: The Teacher

2I/1
Factors influencing teachers' conceptions on learning and teaching, in student-centred medical curricula

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Background: Previous research revealed that teachers' conceptions on learning and teaching influence their teaching practices. Some authors reported a relation between discipline and teaching experience, and conceptions. Our research question was if this could be confirmed in student-centred medical education.

Summary of work: We measured conceptions of teachers in two student-centred medical curricula in the Netherlands, with the COLT (conceptions on learning and teaching questionnaire). Also background information (e.g. discipline, teaching experience, gender, hours in education, task) was collected. In a stepwise multiple regression analysis we investigated the relation between conceptions and background variables and medical school.

Summary of results: Response rate was 50.2% (N = 324/646). Multiple regression analyses revealed that Medical School was the most important predictor, though small. Other predictors were Gender, Task and Hours in Education. About 90% of the variance was unexplained, indicating a large variance between teachers within each medical school, larger than between medical schools.

Conclusions: We found no relation between discipline or teaching experience and conceptions on learning and teaching.

Take-home messages: The variance between teachers' conceptions within each medical school was larger than systematic differences between medical schools. Medical school was the most important predictor of teachers´ conceptions.

2I/2
Teachers' reflection on roles of medical teachers

Eeva Pyörälä *(Faculty of Medicine, University of Helsinki, Research & Development Unit for Medical Education, Helsinki, Finland*)

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Background: This study analyses teachers' reflection on roles of medical teachers in a portfolio used in pedagogical training. It is used in a 10 ECTS credit course at the University of Helsinki. The portfolio was inspired by Harden's and Crosby's article on twelve roles of medical teachers (Harden & Crosby 2000).
The twelve roles have been translated into Finnish, and qualitative description for a 5-point scale has been developed during years 2008-2011. The role framework is presented when the course starts. The 24 course participants assess themselves with the scale three times, write about their development in each role, and make a teacher's profile. They compare the profiles in small-groups.

Summary of work: Teachers' portfolios in course 2011-12 are analysed. Teachers' profiles, their reflections about the roles and the way they write about them are analysed using qualitative content analysis.

Summary of results: The teachers' first self-assessments show that the roles of information provider and role model are typical for the course participants. Other roles have been better recognized and valued along the course. Participants have become more critical in their self-assessment during the course, when they have better understood the demands of each role.

Conclusions/Take-home messages: Portfolio with role framework has proven valuable in teachers' pedagogical training.

2I/3
Implementation of a faculty academy to sustain academic integrity

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Background: The Academy of Medical Educators was established at the University of North Texas Health Science Center to assure the integrity of the medical degree program in the face of economic pressures for faculty productivity.

Summary of work: The Academy provides faculty learning in basic pedagogy, theory, instructional design, curriculum development, informatics and course administration in a formal classroom environment. The Academy serves as a forum for faculty feedback and peer assessment. Participants are nominated by their department chairs and agree to commit sixteen hours per week to education. The dean provides 40% of their salary for this release.

Summary of results: The project resulted in improved student satisfaction with the quality of instruction, minimal reduction in faculty clinical productivity and improved faculty self-efficacy with regard to their appointment at the medical college.

Conclusions: The implementation of a faculty academy designed to promote competency in the learning sciences was successfully executed with minimal loss of clinical revenue and improved student and faculty satisfaction.

Take-home messages: As economic fluctuations place strain on academic budgets faculty are forced to increase clinical and research productivity. Development programs that identify faculty oriented toward education and provide financial support can be successful in protecting academic excellence with minimal institutional risk.

2I/4
The Academy of Medical Educators: Promoting Teaching Excellence across the Continuum of Medical Education

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Sean Hilton (*Academy of Medical Educators, London, United Kingdom*)

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Background: This short communication presentation will highlight the work of the Academy of Medical Educators (AoME). The AoME is a professional organisation for all those involved in the training and education of doctors, dentists and veterinary surgeons. The Academy aims to enhance patient care by providing leadership, promoting standards and supporting educators across the continuum of medical education.

Summary of work: Professional Standards: The Academy is a standard setting body for medical educators in the UK. The AoME Professional Standards define levels of competence across five domains at three levels that medical educators should achieve at points in their careers. The Standards provide a recognised framework for those in education to demonstrate expertise in medical education through accreditation as a medical educator.
Membership: AoME welcomes medical educators worldwide. There are three membership grades depending on the level of career development in medical education: Associate Membership, Membership and Fellowship. Members and Fellows are identified by recognised professional designations of MAcadMed and FAcadMed.
Education: The Academy has developed a new E-Journal, Excellence in Medical Education; hosts a variety of educational events and is developing interest groups through its members' website. AoME works collaboratively with AMEE and ASME to enhance clinical care through excellence in education and training.

2I/5
The teacher, the physician and the person: how faculty's teaching performance influences their role modeling

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Background: Role modeling is an important teaching strategy in residency training. The aim of this study was (i) to explore

how and to which extent faculty's teaching performance influences residents' evaluation of faculty being perceived as a teacher, physician and person role model, and (ii) if these influences differ across specialties.
Summary of work: We used validated questionnaires to gather residents' evaluation of teaching faculty. The main outcome measures were the different types of role models. The predictors were faculty's overall teaching performance and faculty's teaching performance on specific domains of teaching (learning climate, professional attitude towards residents, communication of goals, evaluation of residents and feedback). The data were analyzed using multilevel regressions.
Summary of results: In total 219 (69% response rate) residents filled out 2111 questionnaires about 423 faculty. Faculty's overall teaching performance and their performance on some domains of teaching were significantly associated with the role model types. There were considerable differences across specialties.
Conclusions: This study suggests that faculty can substantially enhance their role modeling as teachers, physicians and person by improving their teaching performance. Which role model type can be strengthened by which aspect of teaching performance depends on faculty's specialty.
Take-home messages: Faculty can use specific teaching strategies to enhance their role modeling.

2I/6
The intrinsic motivation of health professionals to teach: a qualitative study

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Background: Although there is evidence that the motivation to teach has a direct impact on student enthusiasm and level of achievement, research on teachers' motivation is limited. We aimed to investigate the intrinsic motivation of health professionals to teach.
Summary of work: Eight semi-structured interviews with physicians and other healthcare professionals at one institution; 'thematic coding' guided analysis.
Summary of results: Participants reported a strong interest in the subject matter of their instruction. They enjoyed learning while teaching. They stated an internal desire to impart knowledge and showed concern for the effectiveness of their teaching. They described a strong desire to establish teacher-student rapport and to maintain a positive self-perception of their effectiveness as teachers. Corroborative feedback from students was judged crucial in maintaining their motivation to teach.
Conclusions: Findings support the two motivations for teaching suggested in educational literature, interest in the subject matter and interest in the teaching process, and contribute to their deeper understanding. Two additional themes appear to play an essential role in the desire to teach,

although further research is necessary to explore these processes more fully.
Take-home messages: Understanding the factors that enhance a teacher's motivation can help us to optimise educational environments and can contribute to the design of effective staff development programs.

2I/7
Why it is difficult to find and retain clinical teachers

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Background: Like many medical schools, we are faced with colleagues who have to experience the frustration of balancing their clinical responsibilities against a commitment to research and the need to help our medical students develop into the community of practice.
Summary of work: The existing research literature indicates that there are several elements which add tension to the conflict of interests experienced by our clinical colleagues. These include the degree of involvement with the programme, support and training from the medical school, and the degree of respect or recognition conferred upon those involved in the endeavour. A series of interviews were conducted with a range of colleagues, to establish any difficulties which the medical school can help resolve.
Summary of results: Clinical colleagues, in particular, experience real tension in balancing their commitments between their patients and their students. Both students and patients are imperative for their professional status and their view of what makes them an academic clinician. In the UK, hospital management is better at enforcing imperatives than academic management.
Conclusions: It is essential that we find ways of recognising the commitment that our colleagues give to students and the educational process.
Take-home messages: It is clear that communities of practice need to be regularly renewed and refreshed.

2J Short Communications: Teaching the Basic Sciences

2J/1
Use of integrated laboratory classes to enhance learning in the preclinical years

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Background: With the introduction of integrated PBL program, it is necessary to make changes to laboratory classes to suit students' learning needs.
Summary of work: The new model is based on enhancing enquiry-based learning, and encouraging students to work in

small groups to discuss case scenarios, interpret laboratory findings, and apply knowledge learnt from biochemistry, pathology and microbiology to clinical situations. It also enabled them to conduct laboratory work procedures and discuss their findings. At the end of each prac, feedback was provided by tutors. The impact on learning in four different practical classes was evaluated through pre-test post-test quizzes and students' satisfaction was measured through a questionnaire completed by students at the end of each class.

Summary of results: A significant improvement between the mean scores of the pre-test and post-test was observed. Questionnaire results indicated that most students expressed strong positive attitude towards learning and enjoyed learning through solving tasks, applying knowledge, and working in small groups. Students also felt that conducting laboratory procedures together with interpreting laboratory findings were valuable.

Conclusions: A carefully designed model of integrated laboratory classes (ILCs) could help students to enjoy their learning and foster their learning and procedural skills.

Take-home messages: The introduction of ILCs could provide an alternative to traditional methods used in laboratory classes particularly in integrated medical curricula.

2J/2

How do you teach 650 medical students anatomy and clinical implications in 16 weeks? It is done at St. George's University, Grenada twice a year!

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Danny Burns (*St. George's University, Anatomical Sciences, St. Georges, Grenada*)
Robert Jordan (*St. George's University, Anatomical Sciences, St. Georges, Grenada*)
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Ewarld Marshall (*St. George's University, Anatomical Sciences, St. Georges, Grenada*)

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Background: There is continuous change in medical curricula with a tendency to reduce the hours of traditional gross anatomy teaching. At St. George's University, the number of students matriculating each year has gone up to 1300, with an in-take of 650 students twice annually. The anatomy course has adapted itself to this increased number and the demand to prepare students to become lifelong learners. Students do not dissect but instead are presented with several integrated activities. Groups comprised of four students visit several stations with a variety of prosected cadaveric and plastinated specimens, images and endoscopic views of salient anatomical structures. In addition, they participate in PBL sessions with hands-on ultrasound imaging of structures in live people. Students also spend time on a mix of surface anatomy and physical examination, discussion of a research paper and group discussion of material posted on Sakai. Lab videos, pod casts, Sonic Foundry lecture recordings, open lab hours and peer teaching assist students

to prepare and solidify knowledge of the subject. Curriculum changes at SGU use elements of old-style anatomy teaching, creating a hybrid course interspersed with horizontal and vertical integration of core concepts of the basic sciences, also keeping clinical relevance in mind.

Take-home message: Teaching a large number of students is doable by using different methods.

2J/3

Representation of the body in pre-clinical curriculum: An arts-based inquiry

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Background: This short communication illuminates the various representations of the human body offered in preclinical curriculum. These representations, appearing in discussions, practices and simulations, have been observed in the Faculty of Medicine and Dentistry in the University of Alberta during the fall 2011. They are embedded in so-called systems-based learning, mediating a particular understanding of the body and health.

Summary of work: The project consciously focuses on the phase of the studies in which the actual body of the patient is absent, and it is brought under exploration through various media and methods. The data of the project consists interviews of preclinical students and their preceptors, field notes from the three-month observation period and online study material.

Summary of results: The presentation will discuss the potential of arts-based inquiries in medical education by viewing several film- and photo-based artworks that have resulted from the fellowship in the medical school. It is here considered that the personal, imaginative and figurative characteristics of art enrich the analysis of medical education. The presentation will thus bring forward the various ways arts-based methods can be employed not only in educational situations but also in understanding these situations and disseminating knowledge about them.

2J/4

Promoting metacognition in first year anatomy laboratories using plasticine modeling and drawing activities

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Background: Many first year students of anatomy and physiology courses demonstrate an inability to self-regulate their learning. To help students increase their awareness of

their own learning in a first year undergraduate anatomy course, we piloted an exercise that incorporated the processes of (1) active learning: drawing and plasticine modeling; and (2) metacognition: planning, monitoring, reaction and reflection.

Summary of work: The activity was termed 'blank page' because all learning cues were removed and students had to create models and diagrams from reflection and recall. Two hundred and eighty two students responded to a questionnaire reporting qualitative feedback on the exercise.

Summary of results: Based on student responses, the 'blank page' activity was a positive learning experience and confirmed a need to teach metacognitive skills.

Conclusions: From this pilot study we established that drawing or plasticine modeling is an excellent vehicle for demonstration of the metacognitive processes that enable self-regulation: a known predictor of academic success.

Take-home messages: This was implemented as a pilot study in 2010 and published in Anatomical Sciences Education 4: 231 234 (2011). We are now in the process of conducting the activity on a larger scale and collating quantitative and qualitative data. We look forward to sharing some of the new outcomes at the conference.

2J/5
Team-Based Learning methods in teaching topographical anatomy

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George Ramsey-Stewart (*The University of Sydney, Sydney Medical School, Sydney, Australia*)
James May (The University of Sydney, Sydney Medical School, Sydney, Australia)
Craig Mellis (The University of Sydney – Central, Sydney Medical School, Sydney, Australia)

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Background: Principles of Team Based Learning (TBL) have been utilised to good effect during an innovative anatomy by whole body dissection course for senior medical students at Sydney Medical School.

Summary of work: To investigate the efficacy of adopting TBL principles based on acquisition of topographical anatomical knowledge and student feedback. 42 students were divided into eight groups and carried out whole-body dissection on eight cadavers over a 34-day period. TBL teaching strategies included appropriate group allocation; out of class preparation; problem solving intra-group activities; inter-group competition and frequent assessments. The effectiveness of TBL was assessed by knowledge acquisition and retention and by questionnaire.

Summary of results: The course produced a marked increase in topographical anatomical knowledge. The median Pre-course assessment score was 9/20 and the median Post-course assessment score was 19.5/20 (P<0.001). The TBL methods used were considered to be highly effective by the students.

Conclusions: Our findings demonstrate that TBL in an anatomy dissection program provides effective and efficient learning, so enabling a large group of students to have

effective small-group learning experiences, without a large number of teachers.

Take-home messages: TBL provides an efficient and effective teaching strategy in anatomy dissection programs.

2J/6
Identifying effective teaching methods to highlight the clinical relevance of a basic science education

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Background: Many UK medical schools place a heavy emphasis on basic science early in the course, providing little clinical context. The Oxbridge Clinical Skills for Preclinical Students (OPS) course aims to highlight the relevance of medical sciences to students' future careers as doctors. This year we introduced a novel component to the course – a Differential Diagnosis station – and hypothesized that it would prove to be a highly effective teaching method in achieving the course's aims.

Summary of work: 60 students attended in January 2012. They rotated round 4 stations - Practical Skills, Cranial Nerves, Heart Murmurs and the newly introduced Differential Diagnosis, where students learnt methods of systematic diagnosis formulation, applying current knowledge of physiology and anatomy. Data were collected using pre- and post-course questionnaires.

Summary of results: There was a significantly increased understanding of the relevance of pre-clinical studies to clinical practice (n=53, p<0.01), with Differential Diagnosis reported as the station that best achieved this aim (n=53, p<0.01). This station also ranked as the second most enjoyable.

Conclusions: Learning how to systematically formulate a differential diagnosis effectively shows students the relevance of their basic science training to clinical practice as a doctor.

Take-home messages: 'Formulating a differential diagnosis' could be routinely incorporated into early medical training to inspire students.

2K Short Communications: Transition Between Phases of Education

2K/1
Personalized Multi-modal Assessment to Foster Individually-owned Learning Plans

Martha Illige (*Rose Family Medicine Residency, Family Medicine, Denver, United States*)

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Background: The mantra of the 21st century is that degrees, credentials, and certifications do not promise professional competency. "Show me" in the workplace what you can do! Twelve years of developing early assessment of new doctors in our residency have led to a multi-modal approach to learning plans for everyone - but some learning plans are more remedial and some are focused on enhancement.
Summary of work: Current elements include: review of medical school transcript with attention to rotation choices in the last year of medical school (is the floor the norm? – frightfully problematic with student attitudes about entitlement) and examination scores (in the United States, USMLE and COMLEX), development of "pink flags" for faculty on incoming residents who might need assistance, structured oral interviews based on clinical cases, direct observation of care based on the mini-CEX (patient interview, physical examination, and/or procedures), use of standardized or simulated patient encounters with debriefing for formative assessment, in-training examination scores, and residents' participation in specialty board maintenance of certification modules.
Summary of results: Information on 100 learners and ideas about managing faculty resources will be provided.
Conclusions: A formal, structured, organized and formative approach to young medical graduates helps faculty foster success in training.
Take-home messages: Don't assume that your learners are ready for post-graduate medical education. Check!

2K/2
The hidden curriculum of orientation

Rachel Ellaway (*Northern Ontario School of Medicine, Undergraduate Medical Education, Sudbury, Canada*)
Gerry Cooper (*Western University, Schulich School of Medicine & Dentistry, Windsor, Canada*)
Tim Dubé (*Northern Ontario School of Medicine, Undergraduate Medical Education, Sudbury, Canada*)
Tracy Al-Idrissi (*Northern Ontario School of Medicine, Undergraduate Medical Education, Thunder Bay, Canada*)

(*Presenter:* Rachel Ellaway, Northern Ontario School of Medicine, Undergraduate Medical Education, 935 Ramsey Lake Rd, Sudbury P3E 2C6, Canada, rachel.ellaway@nosm.ca)

Background: Learners' transition into medical school is a critical step in their professional journeys. The orientation process at the Northern Ontario School of Medicine (NOSM) involves an intense week of academic, community and social events. A study was undertaken to understand the components, dynamics and outcomes on the NOSM orientation to improve its effectiveness and alignment to its objectives.
Summary of work: The authors undertook a study involving a mix of participant surveys, focus groups, key stakeholder interviews and ethnographic observations. An instrument was also developed to track how learners' identities changed following orientation. All incoming learners in 2010 and 2011 were involved (n=128) along with learners from earlier years, staff, faculty and community members. The analysis involved a range of qualitative methods.
Summary of results: The study confirmed some expectations such as the primacy of socializing individual students into a coherent class. A number of unexpected hidden curriculum factors such as professionalism conflicts, variant participant perspectives, and competing stakeholder needs.
Conclusions: Orientation reflects and embodies the hidden curriculum.
Take-home messages: Orientation to medical school can seem a somewhat benign point of transition. However, it can also be a complex undertaking, rich in cultural and hidden curriculum messages that can influence not just learners but faculty and communities as well.

2K/3
Improving safe prescribing amongst junior doctors: a blended, multi-professional approach

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Background: Poor hospital prescribing consistently compromises patient safety. Anecdotal evidence from pharmacists and findings from local audits and published research suggest junior doctors are commonly implicated.
Summary of work: As current junior doctors, we have created a blended learning module with pharmacists and consultant physicians, to be piloted with newly qualified doctors starting in July. This aims to bridge the gap between theoretical prescribing taught at medical school and practical hospital prescribing. It comprises locally accessible online resources providing practical advice on safe prescribing, supported by interactive case-based discussions to be facilitated by existing junior doctors and pharmacists. Cases will follow patient journeys from admission to discharge, highlighting where errors occur and potential consequences.
Summary of results: Qualitative and quantitative data will be gathered and analysed in early August, before AMEE in Lyon. The objectives are to:
• Improve junior doctors' understanding of typical errors;
• Encourage a mind-set where safe drug prescription is crucial;
• Increase confidence;
• Decrease reliance on pharmacists for identifying mistakes.
Conclusions: An integrated, multi-professional teaching approach during induction, which supplements student learning, should increase awareness of the importance of

careful prescribing and create more conscientious junior doctors.

Take-home messages: Innovative, multi-professional education of new doctors will establish good habits that could have widespread effects on patient safety.

2K/4
Preparing new graduates for clinical practice: An evaluation of pre-internship training

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Paul O'Connor (*National University of Ireland, Galway, Institute for Business, Social Sciences and Public Policy, Galway, Ireland*)
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Background: A consistent finding in the literature is that newly graduated medical students often do not possess the basic clinical skills required to effectively perform the job of an intern.

Summary of work: The four week training course was delivered to 106 newly graduated Irish medical students. The content of the training course was based upon a survey of interns, the requirements of the Irish National Intern Training Programme curriculum, and the domains of good professional practice identified by the Medical Council of Ireland.

Summary of results: The training was positively received, with the students reporting higher levels of preparedness after the training as compared to before. The largest effect size of the training was for the administration of medication. However, the participants wanted more opportunities to practice procedural skills.

Conclusions: The training programme improved the level of self-reported preparedness to work in a hospital environment for newly graduated medical students.

Take-home messages: It is suggested that this course could serve as a model to address the unsatisfactory levels of preparedness for the work of a junior doctor reported by medical students.

2K/5
Pediatric case-based discussion assessment in clerkship might predict the medical students' performances in internship training

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Background: The performances in clerkship for medical students might contribute to the performance in internship. We want to explore different clinical assessments in pediatric clerkship training which might predict the performance in internship.

Summary of work: Ninety medical students from Chang Gung University received pediatric clerkship training in the fifth year and internship training in the seventh year at Chang Gung memorial hospital. Five different clinical training scores in clerkship were compared with the four different scores in pediatric internship training.

Summary of results: The relationship between different clinical assessment scores showed only moderate, low, or poor correlation. We found that the scores of clinical case-based discussion assessment in clerkship is a better prediction factor than the others. The clerk students in upper 25% ranking of clinical case-based teaching and discussion assessment had better performances in all four kinds of internship assessments (OSCE score, assessment score by supervisors, portfolio record score and writing test, all p<0.05) than students in lower 25% ranking of clinical case-based discussion assessment.

Conclusions: The assessment score by clinical case discussion in clerkship might reflect the medical students' learning and working ability in the future and might help us to predict or find students to improve their clinical learning strength.

Take-home messages: Clinical case-based discussion assessment might predict the medical students' learning and working ability in the future.

2K/6
Metamorphosis of the medical student: Tensions and strategies during the transition from the classroom to the clinic

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Background: The transition from introductory years to the clinic is crucial in the formation of doctors. Our aim was to identify the students' learning strategies to master the main 2 tasks of this period: Integrating theory and practice and communicating with patients.

Summary of work: A mixed methodological approach was used. Student focus group (n=9) and a plenary session (60 students, 12 faculty) were conducted. Based on the findings, a questionnaire of learning strategies was developed and applied (n=182 students). Data was analyzed using grounded theory and descriptive statistics, as required.

Summary of results: The transition to the clinical phase of the curriculum was perceived as a major change entailing increased responsibility and uncertainty. Students reported using multiple learning strategies including peer feedback and practice in informal situations. Clinical tutors were considered fundamental, and the integration of knowledge, a major challenge. The results of the questionnaire confirmed these perceptions.

Conclusions: Medical students undergo a transformation from passive to active collaborative learners who devise self-regulated strategies; however, they request more guidance from their clinical tutors, particularly to integrate knowledge from classrooms to the clinic.

Take-home messages: Improved clinical guidance and the promotion of self-regulated strategies may help facilitate the transition of medical students to the clinic.

2L Short Communications: The Patient and Medical Education

2L/1
The Listening Workshop: Patients take on teaching roles to improve students' communication for safe practice with disabled people

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Background: Education policy emphasises the need to work "in partnership" with patients/service users in the design and delivery of education. We have worked with disabled people to design a model where their perspective are central (Phase I) and where with training they can take on teaching roles (Phase II).

Summary of work: Action research methods involving patients/carers, students and educators. In Phase I, focus groups (n=139 students), patient interviews (n=40) were tri-angulated with student questionnaires (n=101) over three pilot cycles. Similarly in Phase II, data from patient/carer and educator interviews (n-24) and student focus groups (n=43); ongoing.

Summary of results: Confirmation of the interprofessional patient-centred workshop design. Positive evaluations highlighting students' ability to listen with empathy and an ability to adapt communication to the needs of a diverse population for safe team-based practice, and patients' benefits. Patients gave feedback on student communication skills (Anderson et al 2011, Medical Teacher). Many patients are progressing to teaching leadership roles (Phase II on-going).

Conclusions: The final workshop design resulted in a model which reflects the human side of healthcare delivery and is suitable for interprofessional education. Sustainability is possible as patients take on teaching roles.

Take-home messages: Working with patients produces quality teaching interventions highly valued by students.

2L/2
Patient Involvement in teaching Cardiometabolic Disease to early year medical students

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Background: Early patient contact in the early years of medical school is being encouraged to be implemented by many medical schools around the world. In the UK, The General Medical Council (GMC) which is responsible for regulating Undergraduate medical education advocates that curriculums should include patient contact throughout all years of medical school.

Summary of work: We describe a method of implementing a program for second year medical students which involves the use of patients with cardiometabolic disease. The aim was to deliver small group teaching with patient interaction with a tutor who was a clinician specializing in the field, facilitating the session. Students were encouraged to engage with patients to improve communication skills and develop professional attitudes.

Summary of results: The course consisted of six sessions. The sessions initially consisted of a tutorial by the clinicians followed by exposure to the patient. Each session concentrated on an aspect of the patient's history in which the students were encouraged to explore in greater detail.

Conclusions: The patient orientated course was well received and attended. Tutors, students and patients thoroughly enjoyed this new innovative approach to teaching. Patients were also impressed by the maturity shown by the students at this early stage of their medical training.

Take-home messages: Patient orientated modules within the early years of medical school should be encouraged. Active collaboration of clinical institutions and planning are the keys to the program's success.

2L/3
Young patients tell their own stories

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Background: For many years, medical students' training with patients with chronic illnesses occurred by physicians requesting the assistance of their own patients in their clinics. As with many traditional forms of medical education, recruitment of these patients became more difficult and physicians have less time to coordinate these visits. This is true in the discipline of pediatrics as well as adult medicine.
Summary of work Second year medical students focus on pediatrics in five 2 hour sessions, with four areas of learning that involve Standardized Patients. Our newest collaboration is to provide pediatric patients with chronic illnesses for formative clinical skills sessions.
Summary of results: We are recruiting patients aged 1-18 to participate in sessions with small groups of students facilitated by a pediatrician. Informational recruitment notepads, similar to a large prescription pad, were developed for pediatricians to give to appropriate patients and their parents. This describes the program, what chronic illnesses are appropriate, and how to contact our program. When we receive inquiries, we interview the patient or parent to determine their readiness to discuss the personal aspects of their lives in an educational group setting.
Conclusions/Take-home messages: The use of Standardized Patients continually extends into new areas. For over a decade we have asked adult patients with chronic illnesses to share their stories with medical students. Now we are exploring the new requirements to extend this program to pediatric patients.

2L/4
Bringing to the class the experience of being ill

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Background: A first year curricular module 'Being a doctor, being a person, and being a patient' was introduced at the FML to sensitize students for a more humanized medicine i.e. making students more aware of patients' resilience and vulnerability as well as the importance of recognizing patients' values and their individual differences. Knowing that attitudes are more easily changed when confronted with reality we provided the presence of some patients, previously admitted to intensive care units, in plenary teaching sessions to tell their stories full of emotions, anxieties, fears and joys. Students had the opportunity to ask questions not only about 'being ill' but also about the patients' life after leaving the hospital.
Summary of work: Evaluation of the teaching process was obtained through anonymous questionnaires at the end of each session.
Summary of results: The physical presence of the patient was reported as the most important moment of each session. The main concepts retained were "resilience", "sensibility" and "understanding".
Conclusions: The testimony of real stories seems to pass with higher intensity the concepts we want to be retained, aiming at a more humanized medicine.
Take-home messages: Involving previously hospitalized patients in teaching is highly valuable to shape future doctors' attitudes and professionalism.

2L/5
Patients' views of medical students' professionalism and how we teach professionalism at the bedside

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Background: Research has demonstrated students who demonstrate unprofessional behaviour in medical school are more likely to undergo disciplinary action. Our challenge is to help such students identify their behaviour as unprofessional and give them strategies to develop alternative, professional behaviours. The Ottawa 2010 Conference recommended that research should focus on developing and evaluating a means of incorporating patients' perspectives into the assessment of professionalism (Hodges et al. 2011 p.362), but less has been said about how that professionalism should be taught. Within current professionalism research the views of patients are seldom sought or represented.
Summary of work: Semi-structured interviews conducted with patients who have participated in bedside teaching with year 3 and 4 medical students from the University of Glasgow.
Summary of results: Patients discussed various themes including students balancing maintaining professional behaviour outside the workplace with the need to maintain work-life balance. Patients think role modelling is important in the teaching of professionalism to medical students.
Conclusions: Professionalism may mean different things to patients than to members of the medical profession. Some patients may be willing to play a more active role in teaching professionalism at the bedside. Role modelling is an important tool when teaching professionalism
Take-home messages: Patients can take an active role in teaching medical students professionalism. Role modelling is important in teaching medical students professionalism at the bedside.

2L/6
Aspects of clinical skills test demanded by the public for the national medical licensure examination in Japan

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Background: To ascertain public opinion regarding the clinical skills demanded for new doctors, we conducted an internet-based survey of the general public in Japan.
Summary of work: We randomly selected 7213 Japanese (age 20-69 years). The main topics surveyed included what kind of skills should be included in a clinical skills test and whether the Japanese government should add such test to the national medical licensure examination.
Summary of results: A total of 3093 (1531 men, 1562 women) people completed the questionnaire (completion rate, 42.9%). The main skills respondents thought should be included were "explaining and discussing medical issues clearly and accurately to patients" (n = 2176, 70.4%), "accurately diagnosing problems by physical examination" (n = 1984, 64.1%), and "ability to carefully interview patients to make a diagnosis" (n = 1663, 53.8%). The percentage of responders who favor adding a clinical skills test to the national medical licensure examination was 90.5% (n = 2800).
Conclusions: The general public demands verification of communication, interview and physical examination skills among new doctors. The majority of respondents indicated that new doctors should be tested regarding their clinical skills.
Take-home messages: Medical educators should incorporate these publicly requested skills into the medical program, and teach and assess medical students accordingly.

2L/7
The patient as a stakeholder in specialist training - is it possible?

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Background: General practice is a community based specialty. Curriculum planning traditionally uses stakeholders representing the patient's views in an indirect way. The aim of this study was to explore the relevance of the patient as a direct stakeholder in curriculum planning.
Summary of work: We carried out a pilot patient evaluation among voluntary participation GPs using a questionnaire, which produced 33 patient evaluations (response rate 61%) of 3 GPs. In our analyses we focused on the patient's view on joining curriculum planning in a meaningful way, and on relevance according to specific educational goals.
Summary of results: 91% of the patients find it relevant to use the patient as a stakeholder. 45% find they are able to judge educational goals concerning communications and ethics, 6% find they are able to judge goals concerning diagnostic, therapeutic and management skills. 88% are very satisfied with goals concerning communication skills and ethics. Written comments underlined the importance of basic trust between the patient and the GP.
Conclusions: Patients consider themselves as an important stakeholder and can bring improvement to the curriculum.
Take-home messages: GP performs as a specialty in local communities, and should work out strategies for involving the patient in curriculum planning.

2M Short Communications: Lectures and Small Groups

2M/1
Study behaviors prior to, during, and after lectures and the effect on course final performance

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Background: Students spend a significant amount of time preparing and reviewing lectures for final examinations and many students actively take notes during lectures to support their understanding.
Summary of work: A year-1 survey was designed to gain deeper understanding of behaviors that occur around lectures, either preparing for a lecture, behavior during a lecture, or reviewing a lecture after it has been given. We investigated the effects of these different study behaviors on performance on a 100 multiple-choice course final. Pre-existing differences were taken into account using MCAT scores.
Summary of results: Response rate was 45% (n=159). Study behavior during and after lectures and time spent preparing for and reviewing lectures were inversely related to MCAT performance. After correcting for pre-existing MCAT differences, only study behavior during lectures continued to show an inverse correlation with course final performance (r=-.29, p=.01), meaning that time spent taking notes and using handout materials during lectures does not have a positive effect on final performance.
Conclusions: Students with lower MCAT scores tend to spend more time and effort preparing for and reviewing lectures.

After correcting for MCAT, these study behaviors (prior-during-after lectures) did not lead to better performance.
Take-home messages: Pre-existing differences could mask any beneficial effects of active engagement on learning and recall.

2M/2
Study on the effectiveness of interactive response system applied in medical courses

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Background: We aim to explore the effectiveness of Interactive Response System (IRS) implementing on medical courses.
Summary of work: Medical students of third and fourth grade of 2008/2009 and teachers of selected ten courses were invited to fill pre- and post- questionnaires inquiring about their IRS experiences and expectations. Class attendance rate as well as class evaluation were used as the outcome indices.
Summary of results: Student attendance rates of IRS using classes (91%) were higher than not-using classes (72%) (p<0.05). The most agreed benefits of IRS from students were 'feeling of fulfilment when answer correctly', 'easier to grasp emphasis of study', and 'tuned up teaching by teacher'. A total of 71.4% agreed on 'in general, IRS facilitates learning'. As to the experienced IRS teachers, agreement on almost all stated benefits of IRS exceeded 90%. Course evaluation comparing IRS using versus non-using teachers, after controlling for gender, teaching years, teaching position and basic/clinical background, showed significantly higher/improved scores on 11 out of 12 questions.
Conclusions: The positive feedback obtained from students and teachers plus the positive outcome of higher class attendance rate on IRS class and higher course evaluation results supported the continuity of utilization of IRS in medical courses.
Take-home messages: Interactive Response System is highly accepted when used in medical courses.
Higher class attendance rate on IRS class and higher course evaluation reflect good results that IRS enhances both teachers' teaching and students' learning.

2M/3
Taking the boredom out of lectures

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Background: Academics should make every teaching session as interactive as possible. Otherwise, both academics and students end up disillusioned, mentally and physically exhausted when learning outcomes do not meet expectations.
Summary of work: The Pharmacy programme at the School of Pharmacy is equivalent to that at the main campus in Melbourne. Academics are provided with the materials and resources to be delivered in lecture format. In order to drive effective learning, I have converted those where I was involved to workshops.
Summary of results: In the last 2 years of teaching pharmacy students, I have converted 3 consecutive lectures into a 3 hours workshop. Feedback from students' evaluation of my teaching, simultaneous peer review of teaching and unit evaluation were done. Results were overwhelmingly positive. 93.3% of students stated that "the tutor's teaching technique stimulated my learning" and 96.7% of students commented "taking all aspects into consideration, the teaching/ facilitation effectiveness of the tutor was good."
Conclusions: Students' motivation to learn is highly dependent on the mode of delivery of a teaching session.
Take-home messages: "Nothing ventured, nothing gained". Being passionate about teaching and having the spirit to be creative can make learning effective for students.

2M/4
Utilization of a Flipped Classroom Approach for Teaching Medical Physiology and Pharmacology

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Background: Content delivery via traditional lectures is commonplace in medical education, despite evidence promoting contextual learning, collaborative thinking, and other interactive educational strategies. In order to transform the classroom into a more engaging learning environment, a flipped classroom approach was developed for a series of physiology and pharmacology topics.
Summary of work: Several conventional lectures were converted to more concise webcasts designed to convey factual information outside of class. These were followed by in-class activities (e.g., clinical scenarios, problem sets) developed to apply this knowledge. Activities required students to work in small groups and instructors to provide feedback.
Summary of results: Students noted the convenience of "education-on-demand" in terms of viewing the webcasts at any time of day. They also reported the effectiveness of "tasting the soup" with the instructor (i.e., practicing their reasoning via in-class activities) prior to "serving the soup" to

the instructor (i.e., taking high-stakes examinations). Collection of examination performance data is ongoing.
Conclusions: A key component in implementing this approach was for pre-class webcasts and in-class activities to each have distinct objectives. The instructor's role is dramatically changed and requires creativity.
Take-home messages: This approach appeared to enhance content retention, increase attendance, and build student confidence while maximizing the use of time.

2M/5
Teachers' perceptions of aspects affecting seminar learning

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Background: Many (veterinary) medical schools have embraced small group learning methods in their undergraduate curricula (Dennick 2008). Given increasing financial constraints on universities, active learning groups like seminars are emerging. Empirical research on seminar learning is scarce. This explorative study aims to investigate which aspects are of influence on seminar learning according to teachers, so active learning can be enhanced.
Summary of work: Twenty-four teachers of a veterinary bachelor curriculum participated twice in semi-structured focus group interviews. Sessions were audio taped, transcribed verbatim and independently coded by two researchers. Template analysis resulted in emerging aspects.
Summary of results: Aspects important for seminar group learning were the suitability of subject matter for use in seminars, the amount, quality and relevance of preparation materials and seminar questions, group composition and group size. Teachers' didactic skills, teacher-teacher collaboration possibilities, course coherence and alignment of different educational methods also affect seminar learning.
Conclusions: Teachers' perceptions are largely consistent with student views on seminar learning (Spruijt, 2012). Course scheduling, course alignment and preparation seem to have a strong effect on seminar learning. Concrete tips on quality assurance, faculty development and seminar content are given to optimize active learning in seminars.
Take-home messages: To enhance active learning in seminars only addressing seminar content is not enough.

2M/6
Small group discussion about competencies using KJ affinity diagram in Medical Introductory Course

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Background: It is important for medical students to understand competencies which they should learn by the time of graduation and methods to acquire them. KJ affinity diagram is a tool for group discussion designed by Dr. Jiro Kawakita.
Summary of work: In medical introductory course, first year medical students experienced small group discussion using KJ affinity diagram. The students received special cards and wrote down competencies which they thought to be important in turn. The cards were gathered and sorted into groups and then methods to learn each group of competencies were discussed. Before and after the discussion, students answered a questionnaire regarding how much they knew about methods to learn competencies.
Summary of results: The number of students who thought they knew nothing or little about methods to learn competencies decreased from 62.7% to 33.4%, whereas students who thought they knew half or well about them increased from 28.4% to 50.0%, or from 8.8% to 16.6%, respectively, after the group discussion.
Conclusions: Small group discussion using KJ affinity diagram was an effective method for students to think over the competencies and learn the way to acquire them.
Take-home messages: KJ affinity diagram is a useful tool for small group discussions.

2M/7
Availability of slides before lectures is associated with increased attendance at lectures

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Background: Computer-generated slides have positive effects on learning when students have access to a copy of the slides before lectures. But some teachers fear that availability of online slides before lectures might be associated with decreased attendance.
Summary of work: The aim of this prospective study was to check whether such an association exists. A cohort study was carried out during the 2010-2011 university session in a class of 208 medical students at the University of Lyon.
Summary of results: Analysis per discipline revealed a positive correlation between average slides availability before lectures and average attendance ($p<0.05$). Mean attendance at lectures with slides available before class lectures was

twice the mean attendance at lectures without slides available before (61% vs 31%, p<0.001).

Conclusions: This study does not allow us to predict that attendance will increase for a particular teacher starting to give access to slides before lectures, but shows that the availability of slides before lectures does not reduce attendance at lectures. On the contrary, it is associated with significantly more students attending lectures.

Take-home messages: Availability of slides before lectures is associated with significantly higher attendance. This result could encourage teachers to give access to their slides online before lectures.

2N Workshop: Residents as Teachers

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Background: Post-Graduate medical trainees (i.e. residents, interns, junior doctors, etc) are critically important teachers of junior colleagues and medical students. However few are ever provided with formal training in this role and are frequently left to 'figure it out' on their own. This workshop, based on the successful Royal College of Physicians and Surgeons of Canada national training program, will outline key strategies and provide practical advice on how to build a Resident as Teacher program.

Intended outcomes: By the end of the session, participants will be able to: 1. discuss the role of residents as teachers and the impact on their own learning; 2. outline broad content areas and objectives for Resident as Teacher programs; 3. articulate principles for preparing residents in this role; 4. identify enablers and barriers to Resident as Teacher programs.

Structure: This workshop is practical and interactive, and will build upon participants' existing expertise. The format will include an interactive plenary and small group exercises to help participants build Resident as Teacher programs for a variety of educational settings.

Who should attend: Medical educators, residency program directors, (chief) residents and faculty developers with an interest in developing Resident as Teacher programs.

Level of workshop: Intermediate.

2O Workshop: Psychometrics for Dummies: everything you wanted to know about analyzing exam data but were afraid to ask: Introductory Workshop

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Background: The post-examination analysis of exam data by psychometric techniques is becoming increasingly important in the quality control and improvement of assessment systems. These techniques can often appear forbidding and complex to the beginner unfamiliar in psychometrics. This workshop aims to simplify the commonly used introductory methods of analysis.

Intended outcomes: • To describe and explain the common psychometric techniques used for analysing exam data.• To interpret and evaluate the results of analysis to improve test quality.

Structure: A presentation outlining the exam cycle and the range of introductory methods available to analyse post exam data. Methods described would include: descriptive statistics, Z-scores, item analysis, reliability estimates, standard error of measurement and factor analysis. Activities would include interpreting the results of psychometric analyses of knowledge based assessments in small group discussions. *(This Workshop is associated with AMEE Guide No 54 which provides a step by step description of the methods of analysis using SPSS).*

Who should attend: Individual with limited knowledge of basic psychometric techniques.

Level of workshop: Beginner.

2P Workshop: Using Accreditation for Quality Improvement

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Barbara Barzansky, American Medical Association, Medical Education, Chicago, United States, Barbara.Barzansky@ama-assn.org

Background: Accreditation includes a self-study by the medical and a survey visit by peers. The lens of the review is the body of standards that are themselves the product of the peers. While it certainly provides a regulatory function it also creates an opportunity for institutional reflection and feedback for quality improvement. How accreditation done in one region might provide quality assessment and improvement opportunities in other regions using World Federation of Medical Education Standards will be discussed. Examples will be drawn from the accreditation body for the United States and Canada known as the Liaison Committee on Medical Education (LCME).

Intended outcomes: Participant will understand the LCME accreditation process of developing new standards and how survey teams make their determinations.

Structure: 40 minute presentation will be followed by case studies that participants will serve as "team members" and decide compliance in specific situations common in the US and Canada.

Who Should Attend: Individuals interested in quality improvement, international accreditation, and medical educators.

Level of workshop: Intermediate.

2Q Workshop: Teaching, Learning and Assessing Professionalism - The Perspective of the Teacher, the Postgraduate Trainee and the Student

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Background: There has been increasing emphasis on teaching about professionalism in undergraduate and postgraduate education. Regulators require educators to embed this teaching throughout curricula. There is an established tradition of teaching some aspects of professionalism, for example, communication skills and ethics. Educators face challenges in teaching and assessing the more nebulous components, including student and trainee behaviour. The hidden curriculum, in particular role modelling has a major impact on learning. This workshop will focus on the challenges of teaching and assessing professionalism. Using practical examples to illustrate how professionalism can be embedded in a programme, participants will have an opportunity to explore how this teaching may be further integrated.
Intended outcomes: A team of educators, undergraduate medical students and postgraduate trainees will facilitate a discussion focusing on: The role of professionalism training from the perspective of the student and postgraduate trainee; Identifying what professionalism means in different institutions and programmes; Exploring ways to overcome barriers to professionalism training.
Structure: Group task on definitions and approaches to professionalism teaching and assessment; Overview of strategies implemented by one institution; Group task to explore barriers to professionalism teaching and assessment; Group task to exploring solutions.
Who should attend: Educators interested in the opinions of students, postgraduate trainees and teachers on professionalism.
Level of workshop: Intermediate.

2R Meeting: AMEE Research Committee (closed meeting)

2S Workshop: Public Health: Responding to a new era

Richard Ayres, Peninsula College of Medicine and Dentistry, Clinical Education, John Bull Building, Tamar Science Park, Plymouth PL6 8BU, United Kingdom, richard.ayres@pms.ac.uk

Samantha Regan de Bere, PCMD, Clinical Education, Portland Square, Plymouth, United Kingdom, sregandebere@plymouth.ac.uk

Background: Public Health teaching is often perceived by students as dull and of limited relevance. This was the case at our institution. Starting with the question "what does every clinician need to know for 21st century practice?" We are re-conceptualising public health teaching. This workshop invites you to participate!
Intended outcomes: To challenge, provoke and inform participants about public health teaching in a contemporary curriculum; To consider the following content: advocacy, health inequalities, sustainable healthcare and ecological public health, global health, humanities and health promotion; To share experience of public health teaching.
Structure: We will start with the premise that all Clinicians must combine a population focus with an individual one Participants will debate what his means for 21st century practice, using evidence and material that will be supplied A set of learning outcomes will be agreed and practical examples (including use of humanities approaches) of how these will be translated into exciting curricula generated.
Who should attend: All teaching staff and students with an interest in public, global and population health, including advocacy and health promotion.
Level of workshop: Intermediate.

2T Workshop: Qualitative Research: A Process for Understanding Phenomena and a Path to Scholarship in Medical Education

Amina Sadik, Touro University Nevada College of Osteopathic Medicine, Basic Sciences, 874 American Pacific Drive, Henderson 89014, United States, amina.sadik@tun.touro.edu
India Broyles, University of New England College of Osteopathic Medicine, 11 Hills Beach Road, Biddeford 04005, United States, ibroyles@une.edu

Background: Many institutions will not promote faculty without a research track despite the fact that physicians and medical educators are overwhelmed with teaching and/or practice. The majority of these professionals do not realize that there is another path to scholarship and publications in their areas of expertise – qualitative research. This type of research is a highly appropriate and rewarding methodology that also aligns well with the principles of medical education. Medical educators need to understand the principles of qualitative research, its research designs, and ways to achieve validity and reliability. This workshop will describe the steps to be followed in writing a research proposal.
Intended outcomes: Participants will be able to define qualitative research, determine a topic of interest, align qualitative research to the goal of study, and target an appropriate medical education journal.
Structure: Participants will be lead through the tools of qualitative research and how they are aligned directly to the research question and purpose of the study: ethnography, case study, interviews, observation/field notes, narrative inquiry, and document analysis. The session will also address ways to achieve validity and reliability. Participant interaction will be ongoing throughout the workshop.

Who should attend: Medical educators willing to participate in scholarly activities.
Level of workshop: Intermediate.

2U Workshop: Underperformance in students: towards more effective approaches to identification and remediation

Jennifer Cleland, University of Aberdeen, United Kingdom
Manuel João Costa, Minho University, Portugal
Rakesh Patel, University Hospitals of Leicester NHS Trust, United Kingdom
John Sandars, University of Leeds, United Kingdom
Kalman Winston, Ross University, West Indies

Background: Evidence indicates that underperforming medical students become underperforming doctors (Yates & James. BMJ 2010; 340:c2040). However, concerns about student underperformance are often not recorded formally and clinical assessments do not always accurately reflect performance. Without accurate feedback, students may continue struggling without support. Where underperformance is identified, typically on formal examinations, support in the form of additional teaching and learning is often provided before students repeat these exams. However, there is increasing evidence that this is not effective other than as short-term "exam coaching".
This workshop will critically explore why current approaches to remediation may be ineffective in achieving long-term change in performance and propose a number of theory-driven developments that may have greater potential for success. The panel will present research which discusses underperformance within the framework of self-regulation; correlates pre-university and early medical-school performance data to produce risk scores and underpin underperformance decision-tools; use theory-driven educational interventions focusing on learning for students in difficulty; supports medical educators identify underperformance during clinical placements and give effective feedback for developing effective self-regulation.
Intended Outcomes: Participants will be encouraged to share their experience of underperforming students and to collaborate in the production of guidance that can inform future policy and practice.

2V Meeting: AMEE eLearning Committee (closed meeting)

2W Posters: Career Choice

2W/1
To determine the motivation factors of medical students for choosing the medical field

Manoj Goyal (*Maharishi Markandeshwar Institute of Medical Sciences & Research, Pharmacology, Mullana, Ambala, India*)
Monika Bansal (*Maharishi Markandeshwar Institute of Medical Sciences & Research, Physiology, Mullana, Ambala, India*)

Shailesh Yadav (*Maharishi Markandeshwar Institute of Medical Sciences & Research, Pharmacology, Mullana, Ambala, India*)
L S Dashora (*Maharishi Markandeshwar Institute of Medical Sciences & Research, Physiology, Mullana, Ambala, India*)
Surjit Singh (*Maharishi Markandeshwar Institute of Medical Sciences & Research, Physiology, Mullana, Ambala, India*)
Varnika Grover (*Maharishi Markandeshwar Institute of Medical Sciences & Research, Undergraduate Student, Mullana, Ambala, India*)

(*Presenter:* Varnika Grover, Maharishi Markandeshwar Institute of Medical Sciences & Research, Undergraduate student, MMIMSR, Mullana, Ambala 133203, India, dr_manojgoyal@yahoo.co.in)

Background: Studies have shown that level and quality of motivation influences learning and outcomes of learning. Moreover, higher motivation has been found to correlate with higher academic grades in both pre-clinical and clinical years.
Summary of work: A structured questionnaire based study was done to assess the motivation of medical students for choosing their career.
Summary of results: Prime motivation for many of the students was social status and prestige. Parents' dream/wish was also a big motivation for many students. High income and interest in science were also present as motivation in many and a few students respectively.
Conclusions: Altruistic motivations were predominant in our study in comparison to the economic aspects
Take-home messages: Knowing the motivations of medical career choice may help to understand the student's profile and their aspirations. Besides, it can be a useful tool for ethical and humanistic education during graduation.

2W/2
Factors influencing the choice of pediatric surgery as a medical career among Turkish pediatric surgeons and residents

H I Durak (*Ege University Faculty of Medicine, Medical Education, Izmir, Turkey*)
A Avanoglu (*Ege University Faculty of Medicine, Pediatric Surgery, Izmir,Turkey*)

(*Presenter:* H I Durak, Ege University Faculty of Medicine, Pediatric Surgery, EÜ. Tip Fak. Tip Egitimi AD., Dekanlik Binasi 2. kat Bornova, Izmir 35100, Turkey, halil.ibrahim.durak@ege.edu.tr)

Background: Each medical specialty has its own reasons to be selected as a career by medical doctors. The aim of this study was to identify the main reasons to select pediatric surgery as a medical career among Turkish pediatric surgeons and residents.
Summary of work: Data of this cross-sectional survey were collected from pediatric surgeons and residents, based on a self-administrated questionnaire during 23rd National Congress of Pediatric Surgery in September 2005. The questionnaire included demographic variables (sex, gender, academic affiliation) and 13 possible influence factors which will be marked on a 7 point semantic differentiation scale

(3=strong negative influence, 0=no influence, +3=strong positive influence).

Summary of results: Eigthy-seven pediatric surgeons and residents participated in the survey. Three strong positive reasons (opportunity to perform surgery, working with children, and expected emotional satisfaction), one moderate reason (ability to appraisal of own skills and aptitude), and two minor positive reasons (expected academic opportunities and a teacher as a role model) were identified to select pediatric surgery as a medical career.

Conclusions: Our findings may be used for the early identification and support of doctors who will become pediatric surgeons in Turkey.

Take-home messages: Choice of medical specialty by a doctor is a multi-factorial process and should be focused more for planning efforts.

2W/3
Satisfaction with the choice of specialty among physicians registered in 1977–2006 in Finland

Teppo J Heikkilä (*Kuopio University Hospital, Emergency Department, Kuopio, Finland*)
Harri Hyppölä (*Kuopio University Hospital, Emergency Department, Kuopio, Finland*)
Tiina Aine (*Medical School, University of Tampere, Department of General Practice, Tampere, Finland*)
Hannu Halila (*Finnish Medical Association, Helsinki, Finland*)
Jukka Vänskä (*Finnish Medical Association, Helsinki, Finland*)
Mattila Kari (*Pirkanmaa Hospital District, Centre of General Practice, Tampere, Finland*)

(*Presenter:* Teppo J Heikkilä, Kuopio University Hospital, Emergency Department, PL 1777, Puijonkatu 2, Kuopio 70211, Finland, teppo.heikkila@fimnet.fi)

Background: Physicians' satisfaction with the chosen career is an important indicator for the content of the work and for the need to develop specialist training.

Summary of work: Physician 2008 Study examined physicians' satisfaction with specialist training. A questionnaire was sent to a random sample of physicians licensed in 1977–2006 in Finland. The response rate was 54%, and the number of respondents 4167. The respondents were asked whether they would choose the same specialty, if they were making the specialty choice again.

Summary of results: Of the respondents, 3016 were specialists or specializing. Of those, 12% would not choose the same specialty, if they were making the choice again. Of anaesthetists 18%, and of general practitioners 17% would not choose the same specialty. Dissatisfaction with the choice of specialty increased with age. Out of physicians under 35 years old 7%, and 24% of physicians over 60 years old would choose a different specialty. There was no statistically significant difference between genders.

Conclusions/Take-home messages: This study indicates, that in some specialties the physicians are more dissatisfied with their choice of specialty. The reasons for this should be identified and taken into account when improving specialist training and working conditions in health care.

2W/4

Diagnosing What is Wrong With Psychiatry: Why Don't British Foundation Doctors Want To Be Psychiatrists?

Emma F W Peagam (*Royal Bolton Hospital, Department of Postgraduate Medical Education, Bolton, United Kingdom*)
Paul Baker (*North Western Deanery, Department of Postgraduate Medical Education, Manchester, United Kingdom*)

(*Presenter:* Emma F W Peagam, Royal Bolton Hospital, Department of Postgraduate Medical Education, Royal Bolton Hospital, Minerva Way, Bolton BL4 0JR, United Kingdom, efwpeagam@doctors.org.uk)

Background: The number of medical graduates choosing careers in psychiatry is in decline. In 2008, of those taking the MRCPsych exam 6% were UK graduates. The study aims to assess newly qualified doctors:
- Self-rated preparedness to work with psychiatry patients
- Attitudes towards psychiatry
- Thoughts on what in their undergraduate training influenced this.

Summary of work: All foundation year one trainees in the North West Foundation Deanery were surveyed. Topics included their undergraduate psychiatry training, their self-rated confidence in psychiatry learning outcomes and self-rated opinion of psychiatry as a specialty.

Summary of results: Over 300 surveys were completed. Half of participants felt sufficiently prepared for practice. Few participants listed psychiatry as a career possibility. Factors positively influencing participants included enthusiastic teachers, passionate doctors and a multi-disciplinary approach; negative influences included not having enough time in the specialty, bored and disillusioned practitioners.

Conclusions: A number of areas were researched superficially; results provide a springboard for further study. It has been demonstrated that passion, enthusiasm and time are key to positively influencing doctors' confidence in and desire to pursue psychiatry.

Take-home messages: Work to increase recruitment into psychiatry needs to start at an undergraduate level.

2W/5
Implementation of a Trust led career workshop programme in Trent Foundation School

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Bridget Langham (*East Midlands Healthcare Workforce Deanery, University of Nottingham, United Kingdom*)
Lynsey Lowe (*East Midlands Healthcare Workforce Deanery, Educational Development Group, Nottingham,United Kingdom*)
Nick Spittle (*East Midlands Heathcare Workforce Deanery, University of Nottingham, United Kingdom*)
Suganthi Joachim (*East Midlands Healthcare Workforce Deanery, Trent Foundation School, Nottingham, United Kingdom*)

(*Presenter:* Charlene Binding, East Midlands Healthcare Workforce Deanery, Educational Development Group, Kings

Meadow Campus, University of Nottingham, Lenton Lane NG72RD, United Kingdom, charlene.binding@nhs.net)

Background: A new workshop programme aimed to support Faculty more closely in 2011/12 in order to complement an existing range of careers support offered in East Midlands, UK.

Summary of work: The programme designed was modular, so that Faculty could offer as 4 stand alone 'components', 2 half days or full day/s as part of their Trust teaching:
Component 1 – career review, recruitment timelines, competition ratios
Component 2 – person specifications, applications and CVs
Component 3 – selection centres and 'specialty speed dating'
Component 4 – interview scoring and interview practice.
6 out of 8 Trusts took part.

Summary of results: 100% (n=190) of trainees reported the sessions were either 'very' or 'quite' useful (71% very useful). "Good at making me think seriously rather than burying my head in the sand" . "Amazing source of information".
All faculty facilitators involved offered constructive feedback: "… Structured, effective and relevant to the trainees compared with offering 1 to 1 sessions"

Conclusions:
• The format developed consistency of approach among a number of Trusts.
• The deanery Virtual Learning Environment has potential to offer greater blended learning approaches in the future.
• A follow up survey is underway to determine longer term impact.

Take-home messages: The programme provided a prime opportunity for Faculty development in the delivery of careers support.

2W/6
Factors that influence career path for graduating medical students who graduated from CPIRD

Sirilak Setthalak (*School of Medicine, Maharat Nakhon Ratchasima Hospital, Pediatrics, Nakhon Ratchasima, Thailand*)

(*Presenter:* Sirilak Setthalak, School of Medicine, Maharat Nakhon Ratchasima Hospital, Pediatrics, 49 Changpeuk Rd. Amphur Muang, Nakhon Ratchasima 30000, Thailand, ssettalak@yahoo.com)

Background: The Health of Thai people in rural areas has been limited. Ministry of Public Health founded Collaborative Project to Increase Production of Rural Doctor to resolve the problems. This study aimed to identify the percentage of post-graduate medical students who resign early from rural government hospitals and factors that influence their academic career.

Summary of work: Data were collected from the completed questionnaires of 20 graduating medical students and 18 internists (60.3% response rate) who graduated in academic year 2010/2011. Demographic data, economic status, attitude to rural based education experience, factors that influence academic interests were studied.

Summary of results: All of the doctors reside in the Northeast of Thailand and fifteen (39.5%) live in rural areas. The majority of them (99.9%) prefer working in rural areas. Thirty four (89.5%) have good attitude to their hometown and 32 (84.2%) want to continue living and working in their

areas. Eighteen (47.4%) desire more competence in knowledge. Medicine is the highest ranking field of interested career. On the other hand, 10 (26.3%) said they don't want to attend a residency program. Personal interests and positive experiences were identified as important factors for career choices.

Conclusions: Positive experiences in community-based curriculum can decrease the number of doctors who prematurely resign from rural hospitals and this, save for personal interest, is the most important factor that determines a doctor's career choice in the future.

Take-home messages: Creating positive experiences in rural settings can increase the number of rural doctors.

2W/7
What are the future plans of German students within their 6th year of studies? Does this practical year influence those plans?

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Melanie Simon (*Medical Faculty of RWTH Aachen University, Dean´s Office, Aachen, Germany*)

(*Presenter:* Linda Bilbang, Medical Faculty of RWTH Aachen University, Dean´s Office, University Hospital of RWTH Aachen University, Pauwelsstreet 30, Aachen 52074, Germany, lbilbang@ukaachen.de)

Background: In Germany the drain of physicians to fields without patient-care is often discussed. Politicians state that students will work in fields like research, journalism, management etc. Different unions suppose that the sixth year of studies, which is a practical year, might motivate students to move into another medical field after graduating. The aim of this study was to find out which plans students have and if these plans change during the practical year.

Summary of work: 696 students answered an online-questionnaire which focused on their future plans and the motivation to work as a physician in a field of patient-care. Multiple answers were permitted.

Summary of results: Most of the students were thinking about working within a clinic (75%) or as a General practitioner (53%). 8% in field of Management and 4% in Journalism. The results of the students' answers in the beginning and at the end of their practical year were nearly the same. There is no gender effect on the decision.

Conclusions: Most of students plan to work in patient care. Practical year does not influence their motivation.

Take-home messages: Practical work within the 6th year does not keep students from working in fields with patients care.

2W/8
Promoting Flexibility in Veterinary Career Preparation through Areas of Emphasis

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L. Clare Allen (*The Ohio State University, Veterinary Administration, Columbus, United States*)
Stephen P DiBartola (*The Ohio State University, Veterinary Clinical Sciences, Columbus, United States*)

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Background: The Ohio State University veterinary college modified its fourth year curriculum to allow students more flexibility in selecting clinical courses through a program called "Career Areas of Emphasis " (CAE).
Summary of work: The change process took approximately two years due to faculty concerns about the potential impact on the ability of graduates to pass the national licensing examination and to staff the hospital. The CAE curriculum was implemented for the Class of 2012.
Summary of results: Combined data for the Classes of 2012 (n=138) and 2013 (who will begin the program March, 2012; n=137) reveal the following CAE distribution: small animal (44%), "mixed" animal, i.e. small and large animal (23%), equine (11%), food animal (12%) and individualized (11%; typically zoo/wildlife or public health/food safety). This indicates a high level of student interest in tailoring their clinical experiences since the former fourth curriculum was most like the mixed animal CAE. The CAE program impacted the availability of students to provide clinical service, requiring adjustments to technical staff support. It does not appear to have impacted the licensing examination pass rate, based on unofficial results to date.
Conclusions: The first year of the CAE program was deemed successful.
Take-home messages: CAEs can promote flexibility in career preparation without a "tracking"-style curriculum.

2W/9
What influences medical students in their long term speciality choices and does this change with increased clinical exposure?

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F Ali (*University of Birmingham, School of Clinical and Experimental Medicine, Birmingham,United Kingdom*)
L J Cheetham (*University of Birmingham, School of Clinical and Experimental Medicine, Birmingham, United Kingdom*)
C Gill (*University of Birmingham, School of Cinical and Experimental Medicine, Birmingham, United Kingdom*)
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Background: The baby boomer generation who are now already specialists had different priorities to the current "Y generation" that strive for better work-life balance and career flexibility. There is also increasing numbers of females in medicine and it is thought that by 2017 female doctors will outnumber males. This means that the demographics in different specialties are changing. But what factors influence medical students' speciality choices?
Summary of work: A questionnaire was distributed to medical students on their prospective career choices. It included questions on favourite specialties, most important aspects of jobs and the influence of clinical exposure to their choices.

Summary of results: Preliminary results from 200 questionnaires demonstrate that specialities with more clinical exposure at medical school are more popular among students. The most important job qualities are work-life balance and length of training for females, and prestige and salary for males.
Conclusions: Clinical exposure and role models significantly influence career choice. Although already implemented this can be further improved.
Take-home messages: Students should be given more clinical exposure in careers that they are interested in. Female students are more likely to enter pathways with better work-life balance meaning that there maybe deficits in busier specialties.

2W/10
Career choice of medical students in a Pakistani medical college and the reasons for their choice

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Masood Anwar (*Islamic International Medical College, Riphah University, Pathology, Rawalpindi, Pakistan*)

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Background: Career choices of medical students influence the provision of health care for the community. This is a descriptive study to see the choice of career in medical students in the final year MBBS and to find the reasons for their career choice.
Summary of work: A 16 items questionnaire survey, based on Likert scale was distributed among the students of final year MBBS in a traditional curriculum to know the reasons for choosing a career.
Summary of results: 87 out of 100 students participated in the survey. Medicine, surgery and gynaecology were the top most careers chosen by the students, with family practice lowest in the ranking. The top 3 reasons to choose a specialty were aptitude, better understanding and work satisfaction for the speciality. The least concerns were parents already practising in that speciality, easier career advancement and speciality related illness in the family.
Conclusions: Although primary health care is the backbone of the health system of a country, student prefer careers in specialities.
Take-home messages: Students should be made aware about importance of family practice as a career choice. Curricula should be made community oriented.

2W/11
The Influence of Gender on Medical Student School Performances

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Han-Pin Kuo *(Chang Gung Memorial Hospital, Department of Thoracic Medicine and Internal medicine, Taipei, Taiwan)*
Jing-Long Huang *(Chang Gung Memorial Hospital, Department of Pediatrics and Medical Education, Taipei, Taiwan)*
Wen-Neng Ueng *(Chang Gung Memorial Hospital, Department of Orthopedic Surgery, Taipei, Taiwan)*

(Presenter: Chien-Da Huang, Chang Gung Memorial Hospital and Chang Gung University, Department of Medical Education and Thoracic Medicine, 199 Tun Hua N. Road, Taipei 105, Taiwan, cdhuang@adm.cgmh.org.tw)

Background: Women still face strong challenges since stereotypes are an important issue of medical education. We investigated the influence of gender on academic performance and extracurricular activities.
Summary of work: Research subjects were comprised of 695 students of the School of Medicine at Chang Gung University who were admitted during 2003 to 2009, including 202 (29.1%) female students. We analyzed the differences of entrance pathways, academic grade point averages, extracurricular activities, behavior records and leadership positions between male and female students.
Summary of results: There were 152 students admitted via recommendation and application, with female students having a higher percentage (34.2%, P<0.001), and 482 students through the National College University Entrance Examination (NCUEE). Female students had better academic achievement (p<0.001) and behavior scores (p=0.045), and more attendance in community services (p=0.024) than those of male students. In view of extracurricular activities, female students attended more religion clubs, while male students attended more artistry clubs. Adjusted odd ratios of those admitted via applications and recommendations as well as academic grade point average for female students compared with male students were 2.363 (C.I.: 1.607-3.475, p <0.001) and 1.068 (C.I.: 1.023-1.114, p=0.002), respectively.
Conclusions: Female medical students are still relatively few and a higher percentage of female students are admitted through applications and recommendations. The academic performance of female students is better than male students independent of entrance pathways suggesting female gender stereotypes should be reappraised.
Take-home messages: The academic performance of female students is better than male students suggesting female gender stereotypes should be reappraised.

2W/12
Gender differences in a graduate survey – residents' income as outcome?

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Marianne Giesler *(University Freiburg, Center of Competence for the Evaluation of Medical Education, Baden-Württemberg, Freiburg, Germany)*

(Presenter: Silke Biller, University Freiburg, Center of Competence for the Evaluation of Medical Education, Baden-Württemberg, Elsässerstraße 2 m, Freiburg 79110, Germany, silke.biller@uniklinik-freiburg.de)

Background: Graduate surveys give important insights in the outcome of medical faculties, as e.g. the career entry and the continuing professional career of their graduates. We analyzed gender differences at the beginning of residents' career.
Summary of work: 514 graduates (return rate 48%) answered a survey 1.5 years after graduation from medical faculties in the state of Baden-Württemberg (Germany) (62% female). Data of 388 residents without parental leave were analyzed (62% female).
Summary of results: Gender differences were found for income: Male residents earned more than female residents. Men were slightly older. Women had somewhat better university entrance diplomas. Concerning labor time including overtime and services no gender differences were found. Ditto work environment, duration of employment and prior work experience showed no differences. Also, there were no gender differences concerning the national examinations. Differences were found with respect to some work aspects: e.g. male participants rated high salaries more important, female participants rated compatibility of family and work more important.
Discussion: Although residents are paid according to collective agreements, gender differences in income can be found among career starters. Probable reasons may be traditional gender roles.
Conclusions: For clarification further research is needed. External validation of the data seems to be essential to design future studies.

2W/13
Career options for women in medical profession

Uma Gaur *(The University of the West Indies, Faculty of Medical Sciences, Bridgetown, Barbados)*
Deepti Gaur *(The University of the West Indies, Humanities and Education, Bridgetown, Barbados)*

(Presenter: Uma Gaur, The University of the West Indies, Medical Sciences (Anatomy), Cave Hill Campus, Barbados, Bridgetown 10000, Barbados, uma.gaur@cavehill.uwi.edu, ugaur111@gmail.com)

Background: Career is a planned professional progress and growth of an individual. Career choice is a multi factorial process influenced by personality, attitude towards a specialty, job opportunities, and circumstances.
Summary of work: The present study was conducted among the medical students of the University of the West Indies. Two hundred medical students from the pre clinical years were taken as a random sample.
Summary of results: The analyses showed that total number of participants were 200 pre-clinical undergraduates. 84% were women. 32% women students have decided regarding options for their postgraduate courses, Majority (52%) opted for family medicine; only 2% women students indicated surgery as a career choice. Women candidates (82%) preferred to have family life with limited working hours. The women specifically opt for family medicine, gynecology and obstetrics, psychiatry. They are less technical but more

planned. Very few women opt for surgical field as a career. In case of women, family life is taken into consideration while making career choices.

Conclusions: The women specifically opt for family medicine, gynecology and obstetrics, psychiatry. They are less technical but more planned. Very few women opt for surgical field as a career. In case of women, family life is taken into consideration while making career choices.

Take-home messages: In 21st century women are stepping into space. The authorities should provide congenial, women friendly working, flexible working hours and equal wages this will encourage women to opt for specialized medical field dominated by men i.e surgery.

2W/14
Problems and countermeasures about continuing work among women physicians in Japan: a qualitative study of alumnae of 14 private medical schools

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Yuka Yamazaki (*Juntendo University School of Medicine, Department of Public Health, Tokyo, Japan*)
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Background: Despite recent increases in the number of Japanese women physicians, it is not known why they work fewer hours and are more likely to be inactive professionally compared to male counterparts. This qualitative survey investigated the reason of such less contribution to physician labour market and its strategy.

Summary of work: Questionnaires regarding their career and work were sent to 2045 women physicians who graduated from 14 private medical schools in Japan. This study used comments given in a free space on the questionnaire. The comments were divided into text which were qualitatively analyzed based on the KJ method.

Summary of results: The overall response rate was 83%, and 359 of total respondents wrote comments. Obstacles for women physicians to work were found to include 'Weak social basis', 'Stereotyping gender roles', 'Job relations' and 'Low motivation'. Regarding strategies, 'Infrastructure improvement', and 'Readjustment of traditional gender role' were emerged as keystones.

Conclusions: In order to fulfill women physicians' potential, it is essential to improve social infrastructure and readjust the traditional gender role.

Take-home messages: Women physicians still face many obstacles to work and develop their career which must be rectified in order to fulfill their potential.

2W/15
How do female surgeons self-narrate their identities? A Figured Worlds approach

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Background: The UK set a 2009 target for a 20% female surgical-attending workforce – in 2012, it remains 8%. Previous studies have attributed this difference to the nature of a career in surgery and lower career motivation among females. Using a Figured Worlds approach, this study aims to explore how females come to see themselves as surgeons, addressing the question "How do female surgeons self-narrate their identities?"

Summary of work: The study comprises 12 individual interviews with women throughout surgical careers, from medical students to retired attending surgeons. Data were explored via template analysis with a priori themes derived from Figured Worlds.

Summary of results: Preliminary results show that female surgeons drew motivation from both negative and positive experiences, which shaped their identities. Relationships, particularly role-models, were important in shaping career-decisions and seeing themselves as surgeons. Balancing family and a surgical career was the primary concern of aspiring and junior surgeons.

Conclusions: Participants perceived the 'Figured World' of surgery as difficult to combine with family life, especially junior surgeons and students. Experiences and relationships, particularly with role models, allowed participants windows into the surgical world, enabling them to identify as surgeons.

Take-home messages: Difficulty identifying with the surgical world may explain the under-representation of women in surgical careers.

2X Posters: The Education Environment

2X/1
Evaluation of educational environment in a new problem-based, community oriented medical program in Latin America: The DREEM inventory at the Universidad Nacional del Sur – Argentina

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Background: The learning environment is an important determinant of the behavior of the student and it is related to their academic performance, aspirations and satisfaction. The questionnaire DREEM (Dundee Ready Education Environment Measure) allows evaluation of the educational environment in medical schools and is widely used throughout the world.

Summary of work: Aim: to assess the perception of the educational environment of medical students from the Universidad Nacional del Sur, a new problem based and community oriented undergraduate medical program in Argentina.

Subjects and methods: A cross-sectional descriptive study. The DREEM questionnaire was applied to four consecutive cohorts of students.

Summary of results: From a total of 148 eligible students 129 (87%) responded to the survey and 122 (82%) were analysed of whom 74 per cent were women. The Cronbach alpha was 0.859. Average overall score was 95% 146,09 IC (143,56 - 148.62) representing an educational environment that is more positive than negative, according to the results of the instrument categories. The average global score in women was 143,78 and in males 146,91 95% CI [144, 03-149, 79] 95% CI [138, 35-149, 22], with a difference of 3,13 95% CI [- 2, 96-9, 21]. (p 0,307).

Conclusions: The overall perception of the students on the educational environment was very good, the possible cause of this result being the student-centred learning methodology. There were no statistically significant differences in total score between genders.

Take-home messages: Our study corroborates the utility of the DREEM questionnaire to identify a key factor when implementing a new curriculum.

2X/2
Evaluation of educational environment with DREEM in a Family Medicine Unit 21 IMSS in Mexico

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Background: Educational environment is a concept of great importance due to the fact that it affects the satisfaction of the student, the learning and academic success. It can be measured through multiple instruments; we used the DREEM, developed by Roff et al, to evaluate the educational environment between Internship students - MIP-, and Family Medicine Residents - RMF.

Summary of work: We applied DREEM questionnaire to 62 UNAM medical students in a Family Medicine Unit, (MIP = 15; R1MF = 18; R2MF=19; R3MF=10, validated in several Hispanic populations. The differences in learning were analyzed by ANOVA for several independent samples. The level of significance was established in p <0.05.

Summary of results: The global punctuation of the educational environment was of 126; the mean for MIP was 147; R1MF = 117; R2MF =113 and R3MF = 130. The results of the articles grouped in 5 domains were: 1. Perception of the learning (students) = 153.4, 2. Perception of the teachers (education) =183.5; 3. Academic perception = 164.9, 4. Perception of the atmosphere = 159.5 and 5. Social perception = 154.4 ANOVA showed, F Ratio = 10.5 and p =<.001; they found differences between MIP and R3MF vs. R1 and R2.

Conclusions: The result of the present study shows a good level of Educational environment.

Take-home messages: The DREEM was useful to evaluate the educational environment in a family medicine unit.

2X/3
First three years' education environment of a new medical school

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Background: The aim was to study the change of environment in the first three years of a new medical centre, Udonthani Medical Education Centre, Udonthani, Thailand by using the Dundee Ready Education Environment Measure (DREEM).

Summary of work: All students at Udonthani Medical Education Centre were asked to complete a Thai version of the DREEM study every year starting in 2009 thru 2011.

Summary of results: Data from 30 students in 2009, 58 students in 2010 and 90 students in 2011 were compared. The overall DREEM scores were highest in the first year of our centre (149.8/200 in 2009), lowest in the second year (131.5/200 in 2010) and increase to 134.5 in 2011. According to DREEM interpretation criteria, DREEM scores were compatible with a more positive than negative environment in every year. The learning environment subscales were compatible with "a more positive perception". The perception of teacher subscale was "moving in the right direction". The academic self perception subscale was "feeling more on the positive side". The environment was "A more positive atmosphere" and the social self-perception was "not too bad" in every year.

Conclusions: Our environment scores in our first three years were in more positive than negative environment. Nevertheless the declination of the mean scores especially the students' perception of teachers reflected our teaching. Many improvements in our teaching are necessary to improve our education environment.

2X/4
Evaluation of the educational environment of the physicians in specialty training with the instrument PHEEM (Postgraduate Hospital Educational Environment Measure)

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Background: To evaluate the hospital educational environment, as perceived by the doctors in specialty training using the Greek translated PHEEM in the area of Western-Greece.

Summary of work: 182 questionnaires were collected in 2011 from a convenient sample of specializing doctors in hospitals of the region of Western-Greece. To the 40 closed questions on a six-point Likert scale, two additional statements were added to the Greek version, a general assessment of the specific position and one regarding to what extent trainees' expectations when entering medical school had been fulfilled.

Summary of results: The overall mean score of all 40 questions was 39%. The subscale mean scores were "role autonomy" 37%, "training" 40%, "social support" 40%. The question mean score of "satisfaction from current training position" 40%, and "expectations fulfillment" 34%.

Conclusions: The doctors in specialty training in Western-Greece seem to be dissatisfied with their educational environment, they are not at all satisfied with the training they are being offered in the hospitals and their expectations they had when entering the medical school were not fulfilled.

Take-home messages: We are producing doctors who are neither satisfied with their workplace, nor with their choice of occupation.

2X/5
Development and psychometric evaluation of an instrument to measure educational climate for undergraduate medical students in clinical rotations - UCEEM

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Background: Attempts to evaluate undergraduate educational environment in clinical rotations with the PHEEM-instrument in Sweden indicate that this setting requires measurements of additional and different aspects of the environment. The aim of our study was to develop an instrument based on PHEEM, suitable for the undergraduate clinical setting, and to evaluate the psychometric properties of this instrument. The ultimate aim was a quality assessment tool that could be combined with qualitative methods in action research projects.

Summary of work: A 38-item inventory was developed based on original and revised PHEEM items, on a student focus group-discussion and current research on work-based learning and medical students' learning in clinical workplace. To determine content validity we used a combination of ratings of item-relevance, written comments on content and wordings from students and 15 other stakeholders (clinical teachers, health professionals, and educational developers)

and an additional focus-group discussion. The inventory was distributed in a pilot-study including 77 students followed by a major study including 465 students (response rate 76%). In agreement with the authors of PHEEM, we named the questionnaire: Undergraduate Clinical Education Environment Measure (UCEEM).

Summary of results: The instrument is currently being tested for construct validity and reliability through analysis of item response rate, floor and ceiling effects, corrected item-total correlations, factor structure and tests for internal consistency. Analyses of the pilot support construct validity and reliability. Final results of the major study will be presented.

2X/6
Residents' ratings of workplace conditions

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Background: The aim of this study was to find out whether residents' ratings of workplace conditions differ by speciality and gender.

Summary of work: In 2009 all residents who had graduated from medical schools in Baden-Württemberg, Germany up to 1.5 years earlier were surveyed. 800 (42%) responded (62% female).
Subjects rated various workplace conditions regarding their importance and the degree to which they were currently realized in their work. Mean differences between these two sets of ratings were analyzed by t-tests.

Summary of results: Significant differences between ratings of importance and realization were found for "Compatibility of family and work" and "adequate leisure time". The largest differences were found for residents in general practice, internal medicine, surgery, and gynecology. For residents in anesthesiology and pediatrics smaller differences were observed. Compared to residents in surgery, general medicine and gynecology residents in anesthesiology stated more often that they could apply what they learned in medical school. In addition, these residents were more satisfied with their job and their leisure time than residents in other specialties; "compatibility of family and work" was more important for them. Beneficence for the general public was more important for residents in pediatrics and general medicine than for those working in anesthesiology. No gender differences were found.

Conclusions: Workplace conditions differ between clinical specialties. It seems that "compatibility of family and work" and "adequate leisure time" are job characteristics seldom realized. Further studies are needed to learn about how these workplace conditions might influence job satisfaction and residency choice.

2X/7

Impact of educational environment measure on burnout during the transition from medical students to postgraduate junior doctors

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Background: Transition from medical students to junior doctors may create a great threat on their mental status and performance. Educational environments also affect learners' well-being and learning effectiveness. This study aimed to investigate the impact of educational environments on the burnout among postgraduate year one (PGY1) residents.
Summary of work: Total 60 PGY1 residents (43M/17F) were surveyed within the first 6 months of training. Instruments of Postgraduate Hospital Educational Environment Measure (PHEEM) and Copenhagen Burnout Inventory (CBI) were applied.
Summary of results: The mean scores of PHEEM were 37.2±6.91, 44.9±7.12, and 31.3±4.42 in each domain of role autonomy, clinical teaching and social support. The lowest score per item was in role autonomy. The mean scores of CBI were 53.68±15.46, 52.05±25.88, 49.68±19.37, and 35.12±19.36 in each scale of work-commitment, personal, work-related, and client-related burnout (P<0.001, the lowest scale vs. other three scales). Total scores of PHEEM and role autonomy were negatively correlated with three scales of personal, work-related, and client-related burnout.
Conclusions: Our PGY1 residents encountered the challenges of poor role autonomy and intense burnout. Their burnout was significantly linked with overall status of PHEEM, especially in role autonomy.
Take-home messages: Educational environment measure creates a significant impact on personal and work-related burnout during the transition to postgraduate junior doctors.

2X/8
Residents prefer to evaluate the Educational Climate more often than supervisors consider this necessary!

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Background: Residents should evaluate the educational climate [EC] regularly. However, the most favourable interval of these evaluations is unknown, because differences exist in perceptions between residents and supervisors.
Summary of work: We used two validated tools for evaluating EC in our hospital for three years in a row (D-rect and SetQ). A questionnaire was sent to all residents and programme course directors for their opinion on the ideal interval of evaluating EC.
Summary of results: The programme course directors considered an evaluation each year a too short interval to implement improvement and a too large burden for the residents. The residents, however, suggested an evaluation each year and considered the work load negligible.
Conclusions: We acknowledged the residents' wishes and implemented a yearly EC evaluation. By giving them, rather than the faculty, control in the interpretation of the results, we hope to improve residents' compliance to these evaluations. Residents and supervisors have different opinions on both the ideal time interval between different EC evaluations as well as the workload of these evaluations.
Take-home messages: Residents prefer to evaluate EC more often than supervisors consider necessary. Residents also consider it less time consuming than supervisors think.

2X/9
Clinical learning environments in departments of Internal Medicine at Mexican hospitals

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Background: Education in the field of the clinic is an integral part of medical training. A clinical learning environment is a multidimensional entity where complex social exchanges happen in an interactive network of forces that influence student learning outcomes.
Summary of work: Differences between clinical learning environments can be explained by the characteristics of the service or department. This study identifies four sub-scales of a questionnaire that assess clinical environments in Mexican hospitals that influence the education of residents as specialists, these are: interpersonal relationships, educational processes and academic activities, institutional culture and healthcare dynamic of the department.
Summary of results: With a validated instrument we surveyed residents of internal medicine to evaluate their educational environment. According to the proposal of Fuller and Unwin of the "continuous expansive - restrictive" learning environments, we will present the results of the four sub-scales at the internal medicine services considered in the research.

Conclusions: The study of the clinical learning environment success rests not only in the identification of the factors that affects it and are important for continuity, but in the ability to understand how these factors shape the educational setting interactively.

Take-home messages: Clinical learning environments in Internal Medicine departments are based in good interpersonal relationships, active academic life, opportunities to practice and an institutional culture that fosters healthcare education.

2Y Posters: Continuing Professional Development

2Y/1
A Blended Learning Strategy: The Open University of the Brazilian National Health System

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Background: Brazil is a large country. One of the greatest challenges of the National Health System is the provision of qualified health professionals in the country. Ministry of Health has been investing in the creation of an educational system for continuing education of health workers, based on active learning using information technology.
Summary of work: This paper presents this system, Open University of the National Health System (UNA-SUS), launched in 2008, and has fifty-thousand health professionals involved in its continuing educational programs. UNA-SUS is based in a collaborative network of public universities, an open access repository of learning resources for health (ARES) and an integrative curricular platform (Plataforma Arouca).
Summary of results: The result was the expansion of post-graduated education for primary health care professionals in Brazil. The places for specialization in family health increased tenfold in five years, from an average of 770 places/year to 7,823, since 2008.
Conclusions: We observed (1) greater coverage and better quality of learning opportunities; (2) access to everything that is produced by the network (ARES); (3) economic and faster job and promotions interviews, as digital curriculum (Plataforma Arouca).

Take-home messages: The potential use of distance education to expand access to learning opportunities for health workers.

2Y/2
The Physician Problem in Knowledge Translation Literature: Implications for Medical Education

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Background: Physician use of best practice acute stroke therapy (tPA) has been inconsistent across various sites in Canada. The aim of our study was to explore this variation using a social science approach known as Institutional Ethnography. This paper highlights the implications of our results for medical education.
Summary of work: This study explored ethnographically an example of how 'best practice' medicine is developed, translated, and taken up in practice across various sites in the province of Ontario.
Summary of results: Interviews were conducted with physicians who deal with acute stroke on a regular basis (urban and community hospitals, ER physicians, neurologists, internists, stroke fellows, etc). Observations conducted over a 2 year time period were also used in this analysis.
Conclusions: In this study, variations in practice and local context emerged as being more than just problems to be solved. They may reflect the recognition that the narrow band of strategies for which we have evidence does not reflect the full range of work that is being provided in community hospitals on an everyday basis.
Take-home messages: Medical education for family physicians is often produced in academic health science centres by specialists and may be less relevant for practicing generalists. Until KT strategies are developed that take into account the institutional context within which medical care is delivered, it is unlikely that efforts to eliminate variation in practice will be successful.

2Y/3
Out-of-hours Dispensing of Medication by Doctors

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Background: The physical act of giving medication to patients to administer away from a healthcare setting, dispensing, is normally performed by pharmacists. Dispensing of medication by doctors is a neglected patient safety issue

and having observed considerable variation in practice the lead author sought to explore this issue further. A literature review yielded zero papers pertaining to this so an exploratory study was commenced. The qualitative arm, relating to junior doctors experience of, and training in, dispensing is reported here.

Summary of work: Focus groups were conducted exploring the beliefs, ideas and experiences of doctors in training pertaining to dispensing of medication. These were recorded and transcribed. The transcriptions were thematically analysed using grounded theory.

Summary of results: The emergency department was the most common site of dispensing. No formal training in dispensing had been received. Informal training was variable in content and utility. Doctors felt dispensing was part of their role.

Conclusions: Despite being expected to dispense and the patient safety issues involved in giving drugs to patients to use at home, doctors do not feel they have been trained to undertake this task.

Take-home messages: Do doctors in your institution dispense medication? Do they know how to do it?

2Y/4
A study to explore why doctors volunteer to attend General Medical Council's "Fitness to Practise" validation exams

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Background: General Medical Council's "Fitness to Practise" (FtP) procedures involve a test of competence. A FtP doctor is compared to a volunteer doctor cohort who attend a specialty specific pilot day. There is a concern that only high-achieving doctors volunteer to attend thus artificially raising the threshold of reference group scores.

Summary of work: We surveyed all volunteers to understand their reasons for attendance. Doctors, representing all grades, are recruited by open advertisement to take a test similar to the real FtP test. They receive £350, eight CPD points and performance feedback.

Summary of results: 131 doctors (94%), from nine specialities, completed the questionnaire, ranking their reasons for attendance. "Exam practice" was most popular, then "interest in medical education" and financial. Overall, financial and exam practice were highest. Themes of insight, interest in the GMC and a desire to influence the GMC are seen.

Conclusions: Attendance is influenced by financial rewards and exam practice, suggesting volunteers are not all high-flying doctors, confident in their clinical abilities.

Take-home messages: Doctors volunteer to attend GMC FtP pilots for a variety of reasons, including financial, and

therefore are representative of normal range of practising doctors.

2Y/5
Improving CPD in Sweden: a task force formed within the Swedish Medical Association

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Background: In Sweden, participation in Continuing Professional Development (CPD) activities by physicians is voluntary, the authorities are not supervising CPD activities, no system for recertification or control of the individual physician's activities exists.

Summary of work: The Swedish Medical Association (SMA) has since 2004 performed a yearly questionnaire to investigate the extent of CPD activities among Swedish physicians. A striking new trend the recent years is that the fraction stating that they did not attend any CPD activity at all the last year has increased. It is also obvious that specialties with great needs and lack of specialists receive less training than other specialities.

Summary of results: The increasing number of physicians that is reluctant to perform necessary professional development activities today should raise questions of doctors' adherence to guidelines, risking patient safety and causing raised costs for medical care in the future. The authorities/principals responsible for health care in Sweden so far have not showed much interest to inform themselves in these matters.

Conclusions: We aim to find ways to keep track of the CPD activities, to develop better ways for CPD in order to have all doctors participating in CPD activities and finally better means to evaluate outcome of CPD activities. We explore the possibility to have external revisions of CPD activities in hospital departments.

Take-home messages: The CPD activities of physicians in Sweden have decreased recent years. The SMA has formed a task force to improve this situation, results will be reported.

2Y/6
Taitoni – A web-based CPD management system in Finland

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Background: Medical profession requires multiple skills and there is a growing need for documenting and assessing professionals' development. One key feature is to acknowledge work environment as a major learning environment. Web-technologies provide a flexible way to document CPD.

Summary of work: Our goal is to develop a web-based platform, which enables personal documentation and planning of professional development. Its core function is to encourage physicians to set learning goals and to document their development in formal and informal learning activities. The tool is accompanied with a national CME-calendar and with official data of individual qualifications and work-place history. Taitoni suggests educational activities according to the physicians learning goals. This is implemented by using MESH-keywords. Platform use and usability is being tested with employers to fit to their competence management process. Employers will get reports of groups of physicians in numbers and in graphics. In future Taitoni may form a national CPD assessment tool.

Conclusion/Take-home messages: Taitoni is linked to employer and work environment. This is because, if personal development lacks direct contact and support from the work environment and health care organization, it carries a risk of becoming an individual's mission.

2Y/7
Comparison of interactive versus didactic methods of teaching in continuing medical education: a prospective study

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Background: CME is important for professionals to update knowledge especially in changing times. Evidence exists that CME techniques can create change in a physician's behavior.

Summary of work: A prospective cohort study of 212 physicians from the Philippines was conducted to determine the effectiveness of an interactive method of teaching compared to the didactic method in developing the terminal competencies in diagnosis and management. Participants divided into small groups received either the interactive (n=103) or didactic (n=109) teaching method utilizing the module Acute Infectious Diarrhea and Common Intestinal

Parasitism. All were required to complete a pre-test, post-test and answer the evaluation. The test score improvement was used to determine the primary outcome of knowledge gained from the learning intervention. The secondary outcome was participant perceived learning measured using a 14-statement evaluation rating scale.

Summary of results: The mean pre-test scores for participants in the interactive method was significantly higher than the didactic method (9.12 vs 7.88, p < 0.001). After adjusting for pre-test scores, the mean post-test score was also significantly higher for the interactive method (p=0.0193). The participant perceived learning significantly favored the interactive method (p <0.05).

Conclusions: When appropriately designed, the interactive format was more effective and was associated with higher evaluation ratings.

Take-home messages: The interactive teaching method was more effective in facilitating learning on diagnosis and management.

2Y/8
Survey of medical errors according to records reviewed by the Medical Council of Qazvin for needs assessment for University's CME programs

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Background: Nowadays, despite numerous scientific and technological advances in diagnosis and treatment, complaints about physicians have increased. The purpose of this study was a survey of medical errors, according to records reviewed by the Medical Council of Qazvin in order to carry out a needs assessment for University's Continuing Medical Education programs in 2010.

Summary of work: This descriptive–analytical study was conducted retrospectively by a review of 107 cases that were approved by Medical Council of Qazvin in the years 2005-2010. Information gathering tool was a checklist for which previous studies had confirmed its validity and reliability. Data were analyzed based on descriptive statistics.

Summary of results: The results showed that the majority of participants who had medical records were male (66/7%), married (75%) and in the age group 40-31 years (31/3%). In most cases led to the complaint respectively including, complaints from physicians (73/8%), Dentists and pharmacist (9/3%) and other medical staff (7/5%). Most complaints about doctors related to misdiagnosis (71/9%) and in the prevention measures related to patients' follow up problem (87/5%) and in treatment areas were related to surgical (9/73%). The ethical issues were (53/3%) and financial issues were (26/7%).

Conclusions: Based on the results of CME for educational planning, in addition to considering the physician' needs, patient's needs should be considered.

2Y/9

An educational tool addressing the deficiency in knowledge in surgeons who regularly use local anaesthetics

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Background: Use of Local Anaesthetic (LA) agents by surgeons is an integral part of post-operative analgesia, necessitating detailed understanding of correct dosing limits to avoid harm. Following discussions with colleagues we suspected possible deficiencies in knowledge, prompting review with an ultimate aim of improving patient care and safety.
Summary of work: A short clinical vignette and questionnaire were completed by 21 surgeons who regularly used LA across five specialities, including Consultants (19%), Higher specialty trainees (SpRs) (57%) and Core trainees (SHOs) (24%) in a single teaching hospital.
Summary of results: Only 57% knew the safe maximal dose of a short acting agent. Of those who were incorrect, 60% would have administered unsafe doses. A similar picture was seen regarding longer acting agents.
Conclusions: Significant deficiencies existed across all levels, particularly SHOs. All participants were contacted and given correct guidance. Assuming this small sample is representative for all surgeons in our hospital then there are potential significant patient safety concerns.
Take-home messages: We consequently plan to issue guidance to all surgeons and trainees, and in conjunction with anaesthetic colleagues instigate a change in practice during the pre-operative operating checklist to correctly calculate LA requirements in advance. A re-audit of practice will assess the impact of this intervention.

2Y/10
Testing a social learning model of translation of medical education to practice

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Background: A key challenge in modern medicine has been the translation of evidence-based methods and procedures into clinical practice. Clearer understanding of the key elements to increasing the efficiency of the translation process can, potentially, yield direct benefits to patient outcomes. This research seeks to refine the current understanding of the translation of research to practice using a large medical conference on HIV as the experimental setting. Through this study, we trace the adoption of new research findings from content provided to learners through to the learners clinical practice.
Summary of work: The structure of the approach is to employ a modified version of the Health Action Process Model, and other cognitive models of behavior. Indicators for the following unobserved variables were collected: knowledge, pre-intent formation barriers, post-intent barriers, practice patterns and perceived consequences.
Summary of results: Significant coefficients were developed among all major constructs. A series of nested models was developed and the final model will be presented.
Conclusions: We found that a critical element continues to be perceived barriers to change. By focusing on the internal representation of the barrier, we hope that we can find more effective methods of addressing these behaviors.
Take-home messages: Social-cognitive models show promise for increasing the efficacy of translation from research to practice.

2Y/11
A survey of UK DGH consultant anaesthetists: factors influencing confidence covering paediatric emergencies when on-call

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Background: Paediatric surgical services are being centralised yet DGH consultants are still expected to manage paediatric emergencies.
Summary of work: We surveyed 2077 consultants in the UK. 579 (28%) responded.
Summary of results: 31% of DGH consultants are not comfortable covering paediatric emergencies when on-call. Number of children under 2yrs anaesthetised in the preceding 12 months and confidence covering paediatric emergencies when on-call are related. 2/3 of consultants stated they would like to participate in supervised paediatric lists. 75% would take study leave to do this.
Conclusions: A minority of consultants do not feel confident covering paediatric emergencies when on-call, however this might reflect increased insight rather than lack of competence. The number of anaesthetics required to gain confidence is small (<20).
Take-home messages: Confidence covering paediatric emergencies when on-call can be significantly increased by:
- anaesthetising approximately 20 children under 2yrs old each year.
- regular involvement with paediatric lists.
- simplification of the processes required for visiting tertiary centres.
- increased use of simulators.

- the return of simple surgical procedures in fit & healthy children to the DGH setting.

2Y/12

Extending professional education to health workers at grass root level: an experience from All India Institute of Medical Sciences, India

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Background: In India, opportunities for continuing education for the grass-root health workers are grossly inadequate. We developed and executed a strategic training program for such allied health workers at our premier institute.
Summary of work: A 'fifteen hours' training programme was organized for 1260 trainees in 32 batches (50 trainee each) for 10 categories of workers during August-December 2012. Trainers (110) were drawn from 12 departments. Besides providing job specific skills in each category, we included core topics: infection control, public health, nutrition and life style, fire safety, communication skills and office procedures. Training methodology included interactive lectures, demonstrations, narratives, videos, PPT slides, and informal discussions. The training was linked to career promotion. Our plan did not disrupt the normal routine functioning of hospital.
Summary of results: Feedback from the trainees and their supervisors after training was encouraging. The participants described training as a "life time experience". The supervisors reported improvement in confidence, communication skills, and health awareness of workers. One more institute adopted this program.
Conclusions: Training large number of grass-root workers is feasible by using an integrated approach in coordination with several departments.
Take-home messages: The continuing education contributes to increased awareness, work satisfaction and efficiency of the health care delivery system.

2Y/13

Emergency physicians as role models - without having had a role model themselves, is that possible?

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Background: Emergency medicine is a relatively young specialisation in the Netherlands. As such emergency physicians (EPs) have not been taught by role model EPs but by other specialists. This might have an influence on the way they themselves teach residents and how they are seen as role models. This paper will examine if these perceptions are correct in light of the findings of the Dutch residency educational climate test (D-RECT) and the systematic evaluation of teaching qualities (SETQ).
Summary of work: In the Albert Schweitzer hospital the D-RECT has been implemented for residents to give feedback on EPs and the SETQ is used as self evaluation for EPs.
Summary of results: The D-RECT and SETQ were completed by 6 (9) EPs and 11 (13) residents respectively. The EPs rate themselves slightly higher than residents do (M=3.63 /M= 3.39). 35.9% of EPs improved, 0% regressed.
Conclusions: EPs in this Dutch teaching hospital perceive themselves to be better role models than the residents do. The residents saw improvement in the functioning of EPs.
Take-home messages: The SETQ and D-RECT can help evaluate EPs as role models. Improvement of docters as role models is shown as they gain experience.

2Y/14

New Strategies to Assess Perceived Needs

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Background: A top priority for CPD providers is to meet the training needs of their target audience. Can we be more efficient in collecting these needs?
Summary of work: The easiest way to assess these needs is to use a questionnaire during a CPD activity. In addition, we have developed tools to help physicians plan their CPD activities based on a reflective approach. Among these tools is a Self-managed Continuing Professional Development Plan (SCPDP) in both paper and online format. The online version allows physicians to record their spontaneously expressed needs. We implemented a tagging system and "cloud grouping" allowing regional CME leaders to view the main needs expressed at a glance. With more than 3400 users (66%) of the online SCPDP, the database allows us to compare usual needs assessment questionnaires with spontaneously expressed needs. We adapted these tools to mobile devices allowing CPD activities participants to record their training needs "just in time".
Summary of results: This tagging system should allow us to compare these different methods. An implementation for at least one year will be needed to give us these results.

Conclusions: Using new technologies and the online SCPDP will help us to rapidly assess the perceived needs and possibly reduce any questionnaire introduced bias.

2Z Posters: Outcome Based Education

2Z/1
How to assess a medical student's ACGME Competencies. The correlation between seven assessment methods applied in clerkship in the largest internal medicine department in Taiwan

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Background: ACGME Competencies of medical students need to be evaluated. This study focuses on the assessments applied in internal medicine clerkship in the study institution.
Summary of work: 206 medical students who completed a 15-week internal medicine clerkship from 2007 to 2010 were enrolled. The performance was judged by seven assessments including MCQ exam, passport writing, chart writing, OSCE, attendance rate, on duty performance, and global rating. The correlation analysis was applied. P<0.05(2-tailed) is defined as statistically significant.
Summary of results: Chart writing, as an assessment for competency in patient care, knowledge, and practice-based learning & improvement, had a positive correlation with MCQ exam(r=0.319), OSCE(r=0.237) and passport writing(r=0.151). On duty performance, as an assessment for communication skills and system-based practice, had a positive correlation with passport writing(r=0.139) and OSCE(r=0.31). Attendance rate, as an assessment for professionalism, had a positive correlation with passport writing(r=0.337) and chart writing(r=0.16). Global rating had a positive correlation with all the other assessments.
Conclusions: The seven assessments, with their individual meaning, have positive correlations with others in the similar fields of ACGME Competencies.
Take-home messages: Written examination, passport writing, chart writing, OSCE, attendance rate, on duty performance and global rating, having positive correlations with each other, can be applied to assess medical students' ACGME Competencies.

2Z/2
Factors leading to successful use of learning goals in a pediatric residency

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Background: Developing self-directed lifelong learning skills is a goal of medical training. Learning goals (LGs) have been used to develop these skills. The ISMART mnemonic (Important, Specific, Measurable, Accountable, Realistic, Timeline) provides a framework for creating successful LGs.
Summary of work: Eleven residents participated in an individualized learning experience based on their own LGs. Five were interviewed about their experience and perception of LG success. Interview transcripts were qualitatively analyzed. LGs were scored using a scoring rubric we developed based on ISMART.
Summary of results: Four aspects of ISMART were identified that led to success: 1) Important goals derived from reflection and self-assessment; 2) Specific goals foster communication with faculty; 3) Assuring accountability by writing down goals or meeting with mentors; 4) Ability to match patients/resources and a particular goal. Most successful LGs scored higher on the rubric than least successful LGs. Individualization, time, and faculty support were identified as key aspects of the learning environment for successful learning from goals.
Conclusions: The ISMART mnemonic was validated as residents emphasized particular aspects that led to success. The learning environment is also important for successful use of LGs.
Take-home messages: Use of ISMART is important but not sufficient for learning from goals. A supportive and individualized learning environment is also essential.

2Z/3
Competencies for the Junior Doctor

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Background: Competency based education system has several advantages and is being advocated as a method of training and assessing junior doctors. The assessment process when used formatively can highlight deficiencies, problems and gaps in training. We have developed and setup specific competency based training and assessment of Trainees in our Paediatric department.
Summary of work: Trainees' experience can be variable and non uniform depending upon exposure. This problem strengthens the need for a formal training programme and a formative type assessment as training progresses. Our targeted assessment process enables trainees to have a set of core competencies achieved during their training period.
Summary of results: Specific competencies were outlined at the beginning of training and each trainee was encouraged to

complete a learning passport. Competencies were assessed by Consultants and direct feedback was provided to trainees. This contributed to their final assessment of completion of training.

Conclusions: Competencies were attained by trainees which enabled them to be more confident and competent in assessing sick children. Good prescribing practice was developed and practiced during the course of training.

Take-home messages: Competency based assessments are the way forward to train future junior doctors and our model has been proved to be benefical to our trainees.

2Z/4
Procedure skills of graduating medical students

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Background: Procedure skills are crucial for physicians in The Medical Competency Assessment Criteria for National License 2012. There are 46 procedure skills required in the "Does" level of Miller's pyramid. This study was conducted to assess procedure skills of graduating medical students at Khon Kaen Hospital, Khon Kaen, Thailand.

Summary of work: The self-administered questionnaires of 46 procedure skills were distributed to 37 graduating medical students at Khon Kaen Hospital, recording the student's skills in "knows", "knows how", "shows how" and "does" level and number of performed cases.

Summary of results: Twenty-six questionnaires were returned (70.2 percent). The graduating medical students' performances ranged from 30-46 procedures. There were 14 procedures (30.4 percent) that everyone got in the "does" level. Over half of students had limited experience in 5 procedures (10.9 percent) such as marsupialization of Bartholin's cyst, cervical polypectomy, postural drainage, removal of a foreign body from a vagina, and umbilical vein catheterization.

Conclusions: These 5 limited procedures need to be considered in the skill teaching plan before graduation.

Take-home messages: To improve hand-on experience for the graduating medical students will be challenging to all medical schools aiming for patient safety as a whole.

2Z/5
Scottish GP Rural Acute Care Competencies and Educational needs

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Background: The Remote and Rural Implementation group (RRIG) Scotland, highlighted the sustainability of services and workforce in remote Community Hospitals as a priority issue. The most pressing of these reasons centred on the recruitment, education, skill acquisition and maintenance, appraisal and revalidation of General Practitioners (GPs) providing acute medical care in remote Community Hospital settings across Scotland. The Remote and Rural Healthcare Educational Alliance (RRHEAL) co-ordinated work identifying affordable, accessible and sustainable education pathways supporting Rural Practitioners providing care in acute settings.

Summary of work: RRHEAL convened a short-life working group under the chairmanship of the NES North of Scotland Director of Postgraduate GP Education. General Practitioners in remote Community Hospital settings and related areas across Scotland provided expertise by defining competences and educational requirements.

Summary of results: The key steps:
1. Identification of core competences for a general practitioner providing care in Acute Settings in the remote hospital context.
2. Identification of current education and training already delivered and its suitability for this group of R&R general practitioners.
3. Identification of gaps in educational provision.
4. Description of an education pathway to support General Practitioners in remote Community Hospital settings.

Conclusions: The short life rural general practitioner advisory group defined the additional skills and competences over and above those covered in GPST that a GP would require to undertake work in the rural acute care setting.

Take-home messages: This extensive list of competencies was refined and categorised into 11 clusters. These formed the basis of a national structured education programme for general practitioners practising in rural acute care settings.

2Z/6
Clinical teachers at District General Hospitals are less well informed about medical students' learning outcomes when compared to clinical teachers at a Teaching Hospital

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Background: Medical students frequently receive parts of their clinical training at both District General Hospitals (DGH) and Teaching Hospitals (TH). To ensure high quality clinical teaching, clinical teachers need to know the curriculum regardless the site of rotation.

Summary of work: Inspired by a seven-category concept from Stanford University, a web-based questionnaire

reflecting different aspects of clinical teaching (Likert scale 1-6), was introduced in 2009 at the medical school of University of Uppsala, Sweden. One aspect students assessed is whether their clinical teachers at the DGHs/TH knew the students' expected learning outcomes of theoretical knowledge and practical skills.

Summary of results: From autumn 2009 to spring 2011, all available student assessments were collected from courses that provided clinical rotations at both DGHs and the TH. The students' response rate was 70%. Mean rating regarding clinical teachers knowledge about expected learning outcomes was at the DGHs 3.71 (SD=1.5, n=1912) and the TH 4.22 (SD=1.4, n=2073), (p<0.0001).

Conclusions: Clinical teachers at rotations in DGHs are less well informed about the students' curriculum as compared to clinical teachers at a TH.

Take-home messages: To ensure high quality clinical teaching, better communication of the curriculum to clinical teachers at DGHs' rotations is desirable.

2Z/7
How to teach non technical skills to residents using their clinical experience: Introducing resident-centered learning

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Background: The non technical skills of the CanMEDS framework have traditionally been taught in a hidden curriculum, or in the worst case, not at all. Since the framework was adopted as a general outline for all postgraduate medical training in the Netherlands, structured education in the non technical skills has become compulsory. However, the existing training programs often do not meet the residents' needs: they are time-consuming, do not fit into the work schedule and, most importantly, do not allow optimal transfer of training.

Summary of work: Therefore, we have developed several new methods based on resident-centered learning. Applying the modern teaching principles of adult learning and workplace learning, we used the clinical experience of residents to shape the educational content. We focused on the teaching of non-technical skills communication, collaboration and professionalism.

Summary of results: For the implementation we developed a menu card with several methods from which residents and/or staff members can choose. Selecting a method which meets their needs motivates and creates commitment. The meetings are situated in the work environment (i.e. staff room, resident room) and suit their work schedule. Typical for all the methods on the menu card is that we let the residents' clinical experiences determine the content of the meetings. In this way, we can provide theoretical background which can be applied immediately.

Conclusions/Take-home messages: The effectiveness of this resident-centered learning is currently being researched. We will interview several residents to find out the advantages and disadvantages of the different methods. The first results will be presented.

2Z/8
Social competencies in undergraduate education - a process study

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Background: Within curriculum design the focus has shifted from the physician-patient dyad to a broader view that amplifies the perspectives of epidemiology, public health, community medicine and prevention. In the medical curricula, however, specifically social competencies are rarely found.

Summary of work: A workshop with 44 medical education experts (medicine, dentistry, biology, sociology; the humanities, education and psychology) was conducted. Themes were organized according to the different fields in which physicians need to exercise social competencies, i.e. on an individual level, on a community level and on a more general political level. Special attention was put on physicians as teachers. The objective was twofold: to agree on a common definition of social competencies and to develop adequate teaching units.

Summary of results: Social competencies may not just be included in the list of learning objectives. They must be related to other competencies, especially communicative competencies. They also have to be regarded as highly dependent on the political and cultural context. The importance of teachers has to be taken in to account, both as role models and regarding the hidden curriculum.

Conclusions/Take-home messages: Our workshop as a bottom-up approach shows one method to arrive at a common understanding of social competencies that translates theory into practice.

2Z/9
Curriculum Development: From competencies to skills and back to competencies

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Background: Skills play a central role in the competency-based undergraduate curriculum of the Faculty of Medicine, "Iuliu Hatieganu" University, Cluj-Napoca, Romania.

Summary of work: The start point for curricular development was the CanMEDS 2005 Physician Competency Framework: Medical Expert, Communicator, Collaborator, Manager, Health Advocate, Scholar and Professional. The competencies were translated and described in an notebook with 198 "generic skills", organized in eleven chapters: Clinical examination, Clinical procedures, Laboratory and diagnostic tests, Effective communication, Clinical reasoning

and decision-making, First aid and resuscitation in medical emergencies, Therapeutic prescriptions, Management skills, Health promotion and maintenance, Critical appraisal and Law & Ethics. The selection of skills was based on the requirements of modern practices, the curricular recommendations made by the Association for Medical Education in Europe (MEDINE 2) and the educational opportunities we can offer to our graduates.

Summary of results: The teachers translated / applied these "generic skills" on the 228 Clinical presentations of the Faculty of Medicine, developing specific activities, learning outcomes and competencies.

Conclusions: The learning outcomes of our competency-based curriculum were developed by applying the "generic skills" on specific learning objectives, i.e. Clinical presentations.

Take-home messages: The competency-based curriculum is the result of a continuous process of active student involvement in specific activities.

2Z/10
A CanMEDS matrix exercise: a valuable process

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Background: A 3 year medical master curriculum was redesigned because the previous curriculum, based on the CanMEDS framework of essential roles of physicians, lacked focus on the phased development of every single role.

Summary of work: The seven CANMEDS roles and enabling competencies were divided over a matrix of the subsequent clerkships. Assignment of the competencies was initially done by two educationalists and two physicians, and continued in meetings with several medical divisions.

Summary of results: Whether or not to focus on all seven roles from the beginning was a point of debate during the matrix exercise. Consensus was reached on the argument of greater learning effectiveness by initial focus on fewer roles. The first year focuses on the central role of medical expert, plus those important in the immediate relation with patients: communicator and professional. The second year adds roles that are important in the larger context: collaborator, manager and health advocate. The third year integrates all roles with an extra focus on the role of scholar.

Conclusions: The competency matrix exercise was useful in the redesign of the medical master curriculum. It proved to be even more valuable as an awareness raising tool among the medical teaching staff.

2Z/11

CanMEDS roles in pediatric morbidity and mortality rounds

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Background: Morbidity and Mortality (M&M) rounds are used to review patient management, improve quality of care, and educate medical trainees. The CanMEDS framework was designed to assist residency programs in training all aspects of clinical practice, with the goal of improving patient care. This study examined the influence of a structured framework for identifying issues at M&M rounds.

Summary of work: Following the case description attendees were asked to identify the relevant issues. Half of responders were given a blank paper, and the other half had the CanMEDS roles listed as prompts. Differences between the two groups were compared.

Summary of results: 111 (57 CanMEDS, 54 unprompted) individuals have identified issues. The mean number of issues was significantly higher in the CanMEDS group compared to the blank group (3.7 vs. 2.6, p=0.039). When prompted with the CanMEDS roles, there were significantly more issues identified in the roles of Communicator, Collaborator, and Scholar. There was no difference in total number of issues raised or number in each role based on level of training.

Conclusions: When prompted with the CanMEDS roles, attendees at M&M rounds identify significantly more quality of care issues than when they are not given prompts.

Take-home messages: This could be a valuable framework for structuring M&M rounds.

2Z/12
Mandatory Group Learning Activities (MGLA): Getting Residents Ready for Lifelong Learning

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Background: The Royal College of Physicians of Canada's (RCPSC) CanMEDS project defines the roles of a physician to include seven important competencies, one of which is the Scholar role. An important aspect of the Scholar role is that physicians are expected to maintain and enhance professional activities through ongoing learning, describe the principles of maintenance of competence, and document their own learning processes, to name a few. In specialty practice beyond postgraduate training, the RCPSC expects its fellows to participate in the Maintenance of Certification (MOC) process for maintenance and renewal of their fellowship.

Summary of work: In our pediatric residency program at McMaster University, we identified few opportunities for residents to model the future accountability required of them with respect to the ongoing maintenance of certification through lifelong learning. Specifically, there was no accountability for residents' attendance at the numerous formal teaching activities that were available to them. To remedy that issue, the program initiated its own MOC program to allow residents to document their learning process. The MGLA (mandatory group learning activities) program identified minimum requirements for attendance at various sessions and requires residents to keep track of their activities.

Conclusions/Take-home messages: This process has not only helped improve attendance but provides a realistic "dry run" for residents with respect to what will be expected of them as future life long learners and Scholars.

2Z/13
Integrating CanMed, SCLO and Tuning project (Medicine) competencies into the undergraduate Medical education curriculum at Graz Medical University

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Background: In order to comply with the contemporary demand any medical curriculum is faced with, i.e. to be competency-oriented as well as outcome-based, we sought to re-evaluate and wherever necessary remedy our 8 years ago established new curriculum of undergraduate medical education.

Summary of work: Instead of a small expert group focusing on the major part of creative work which later on is more or less just faithfully handed over to department heads and teaching coordinators for implementation, we sought from the beginning to involve as many people concerned with implementation as possible right from the beginning. Thus, a computer-based interactively accessible hybridized version of the learning outcomes of CanMeds, SCLO and the Tuning Project Medicine in a threefold manner, i.e. symptoms-oriented, clinical faculty-based and role-oriented according to the role definitions to be achieved within pre-graduate Medical education, was prepared.

Summary of results: First results are presenting themselves in changes in contents of teaching and modes of assessment. Even the initial part of our medical curriculum that is not covered in any of the above-mentioned catalogues for learning outcomes in Medical education, i.e. preclinical

teaching, feels now compelled to come up with their own learning objectives to be followed up by subsequent clinical teaching modules.

Conclusions/Take-home messages: Although the process is currently not nearly completed, the involvement from the beginning of as many 'executors of teaching' as possible seems to be the safest predictor of anything, thought up with the best possible outcome in mind, to actually come to life later on.

2Z/14
Development and implementation of a comprehensive competency assessment system for nursing students

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Background: Evaluation of achievement of learning objectives needs an accurate and effective assessment program. The aim of this study was to develop a comprehensive competency assessment program for senior nursing students in their critical care rotation.

Summary of work: The learning objectives of the course were determined using an expert panel. Then, the objectives were categorized into three categories: cognitive knowledge, clinical skills and professional behaviors and suitable assessment methods were identified for each category. These included oral exam, global rating form, direct observation of procedural skills and clinical work sampling. Content validity of the assessment system was established using content validity ratio (CVR) and index (CVI). The reliability of the assessment system was determined by Cronbach's alpha coefficient.

Summary of results: All items of the assessment system had a high CVR ($P<0.05$). CVI of subsystems ranged from 0.93-0.97. Alpha coefficient of the whole system was > 0.90 and for subsystems ranged from 0.72-0.96. Our findings showed most of the teachers (76%) and students (89%) believed that the new assessment system had a positive educational impact on students.

Conclusions/Take-home messages: Because of the high validity and reliability of this assessment system, its multidimensionality and educational impact, we can apply it for effective evaluation of clinical performance of nursing students.

2AA Posters: Clinical Skills

2AA/1

The mental state examination ISCE: medical student performance and perceptions at the Peninsula Medical School

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Background: In the UK it is a requirement of the General Medical Council that on graduation students can undertake and interpret the mental state examination (MSE). Peninsula Medical School (PMS) has an integrated, modern curriculum. The mental state examination is taught as a clinical skill in year 2 and assessed by means of an integrated structured clinical examination (ISCE) at the end of years 2 and 4. Anecdotally students complained that they found the mental state exam ISCE difficult compared to other ISCE stations and preliminary analysis of performance data confirmed this. Two research questions were posed:
1. Are there particular problems with teaching, learning, practising or assessing the mental state examination (MSE) in this integrated curriculum?
2. Do the students find the mental state examination difficult and if so why?
Summary of work: A questionnaire survey was designed and administered to all 3rd and 5th year students.
Summary of results: A total of 229 questionnaires were completed giving a response rate of 67%.
Conclusions/Take-home messages: About a third (32.7%) of students did find the MSE ISCE more difficult than the other (non-MSE) stations. The reasons given included timing and the use of actors as well as perceived sensitivity, challenging and personal aspects of the subject.

2AA/2
The Assessment of Performances in the Pediatric Abdominal Physical Examination of Medical Students Learning from Different Teaching Methods

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Background: The abdominal physical examination is very important for medical students' clinical skills. We compare two different teaching methods, one solely based on lectures and the other solely based on hands on demonstration of actual patients to assess the learning outcome differences of the medical students' skills.
Summary of work: Forty-three students were assessed by their performance with their medical record documentation of abdominal physical examinations of patients. Among them, 25 students underwent the lecture method of teaching and 18 underwent the bedside examination method of teaching before their physical examination and documentation. The abdominal physical examination includes four criteria as inspection, auscultation, percussion, and palpation.
Summary of results: There were significant achievement differences (p <0.05) of auscultation (5 vs. 7 points) and palpation (9 vs 12 points). The summarized score was 29 vs. 35 points, with overall significant differences of performance between the two groups.
Conclusions: Our investigation showed the bedside examination teaching method of actual patients was superior to the lecture based teaching method in the pediatric abdominal physical examination learning for medical students, especially in the two aspects of auscultation and palpation.
Take-home messages: Bedside examination teaching method is better than lecture-based for medical students' learning in abdominal physical examination.

2AA/3
The introduction of a checklist for practical skills improved the clinical teaching for medical students

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Background: Medical students need awareness of, and opportunities to perform, the practical skills of their curriculum during clinical rotations. Based on the idea of constructive alignment, a checklist was created at Uppsala University Hospital, Sweden, to specify the skills to be acquired during a rotation.
Summary of work: An optional checklist was utilized in 2011 by students in the anaesthesiology rotation. It was evaluated by a free text questionnaire and by the pre-existing hospital-wide evaluation instrument where students evaluate their own and their teachers' knowledge of the expected learning outcomes and the quality of tutoring of practical skills (Likert-scale 1-6). Preceding semesters, anaesthesiology was the highest ranked rotation on these issues.
Summary of results: Seventy-four students (97%) used the checklist. In the questionnaire, 73% stated in free text that its use clarified the practical skills they should acquire. After introducing the new instrument, the evaluation score of the anaesthesiology rotation increased from 5.1±0.8 (n=190) to 5.3±0.9 (n=68); p<0.05.

Conclusions: Introducing a checklist increased mean evaluation score regarding knowledge of expected learning outcomes and the quality of tutoring of practical skills.
Take-home messages: A checklist for practical skills seems effective. It is now introduced for all rotations in our University hospital.

2AA/4
Evaluation of learning experience and confidence level in operative skills training in Obstetrics and Gynecology

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Background: Performing operations under close supervision is a mechanism for balancing experience gaining and patient safety. It is of interest to study the learning experience and confidence level.
Summary of work: A questionnaire was developed to survey the past experience of residents training in obstetrics and gynecology and confidence level of each procedure using Likert scale (1-5). The satisfactory result was set at 4.
Summary of results: Twenty five residents answered the questionnaire. For the simple operations with minimal risk including third-degree tear episiotomy repair, pudendal nerve block, postpartum tubal resection and manual vacuum aspiration needed 2-8 cases to achieve the setting goal. The simple operations with moderate risk including vacuum extraction, manual removal of placenta, breech assisting, exploratory laparotomy for ectopic pregnancy and ovarian cystectomy needed 5-10 cases whereas difficult ones; cesarean section and hysterectomy required at least 20 cases.
Conclusions: Confidence of operative skills depends on the difficulty of the operations and past experience. To achieve the satisfied confidence level, a minimum of 5, 10 and 20 cases for the simple with minimal risk, simple with moderate risk and difficult operations performed under close supervision are recommended.
Take-home messages: Minimum requirement for each procedure should be prepared for the training program.

2AA/5
Incorporating Ultrasound Use for Teaching Physical Examination Skills

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Background: Bedside teaching is an essential aspect of medical education since mastery of physical examination improves clinical decision making. However, lack of time or suitable patients and waning faculty interest have contributed to a decline in bedside teaching. Concurrently, the availability of point-of-care ultrasonography has increased.
Summary of work: In our Clinical Teaching Unit, we designed an innovative session that combines bedside ultrasound with physical exam teaching. We propose that this format improves knowledge of bedside ultrasound use and stimulates learning of physical examination skills. In a pilot study, we ran sessions with 3-5 junior internal medicine residents, with a projected 50 participants until July 2012. Subjects are surveyed on a quarterly basis for qualitative feedback and self-reported clinical application.
Summary of results: Residents enjoyed these sessions. Ultrasound facilitated trainees' understanding of performance characteristics for physical exam maneuvers by comparison to a reference standard. Knowledge retention seemed to be reinforced by linking physical exam findings to underlying anatomy and physiology. Participants reported increased use of bedside ultrasound to confirm physical findings, especially in landmarking for procedures.
Conclusions/Take-home messages: Contrary to assertions that technology hinders bedside teaching, we observed that bedside ultrasound can increase interest and stimulate learning during physical exam teaching.

2AA/6
Procedural skills training for pre-clinical medical students - redesigning a workshop programme

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Background: University of Queensland's MBBS programme has increasing student numbers. This poses challenges regarding procedural skills training capacity during Years 1 and 2 of the degree. Traditionally the workshops involved a tutorial, practical demonstration, then "hands-on" procedure practice. No skills competencies were assessed. This paper outlines the workshop redesign and reports the student and tutor evaluations findings.
Summary of work: The redesign eliminated didactic teaching and increased time available for "hands-on" procedure practice. Students completed an on-line module prior to attending the workshop, consisting of a short presentation, procedural video(s) and a competency checklist. Tutors assessed basic competencies using the checklist. Evaluation surveys were administered at the end of each workshop.
Summary of results: This model provided students maximum opportunity for procedure practice under tutor guidance,

without increasing expense. Students practiced skills and obtained basic competency for procedures taught. Evaluation data indicated student and tutor satisfaction with the new format. Students also indicated the workshops helped prepare them for the end of year elective clinical placement.
Conclusion: Students value "hands-on" procedural skills practice, despite being assessed. Increasing student numbers means programmes may need redesigning to be time-efficient, whilst maximizing opportunity for practice, without increasing overall costs.

2AA/7
Improving Safety of Vascular Catheter Insertion in High-Risk Newborns Through Standardized Teaching

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Background: Umbilical and percutaneous central catheter placement in high-risk newborns are common NICU procedures with high complication rates, particularly when inserter experience varies. We developed, implemented and evaluated a standardized catheter insertion training program for NICU clinicians to improve patient safety.
Summary of work: Seventy-one clinicians were surveyed to assess learning needs. Using the results, a program that included a manual, didactic seminars, self-study electronic module, pocket cards and low-fidelity simulation for practice and feedback was developed. Effectiveness was assessed with pre- and post-training multiple choice knowledge tests and Xray quiz focused on recognition and management of catheter malposition, plus a post-training simulation performance test. Malposition of catheters inserted in the NICU was considered a complication indicator.
Summary of results: Real-life practice and simulation rated highest of teaching methods. Seventy-six clinicians completed at least one program component over 3 months. Post-training knowledge scores ($65.2\pm11.1\%$ vs $84.6\pm9.1\%$, n=65, mean±sd) and Xray scores($58.6\pm13.2\%$ vs $68.7\pm15.9\%$, n=60) improved significantly compared to pre-training (p 0.05).
Conclusions: A standardized training program resulted in improved knowledge and recognition of catheter malposition but not a significant decrease in malposition rate in the NICU.
Take-home messages: Clinical training may improve procedural success.

2AA/8
Resuscitation – Back to Basics with ABC

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Background: Internationally, there has been a move towards early recognition and management of the deteriorating patient with the aim of preventing cardiac arrest. However, the structure of resuscitation teaching within the Edinburgh MBChB programme did not fully reflect this. A structured approach to patient assessment was delivered in the senior years with defibrillation skills and the Advanced Adult Life Support algorithm taught in junior years. As a result, junior students were skilled for the management of cardiac arrest but unable to recognise and treat the ill patient.
Summary of work: Following end of year 3 OSCE examinations in 2010, it was evident that students found management of the deteriorating patient challenging. A shift in focus was required and new learning outcomes were developed and aligned with modular teaching. Subsequent assessment in 2011 confirmed improvement in recognition and management of illness when compared with the previous year. These results enabled re-evaluation and design of the session and we hope to demonstrate continued improvement in the forthcoming exams.
Conclusions: Changing the emphasis of resuscitation teaching has provided the students with a framework by which they can more confidently understand, assess and treat the deteriorating patient.
Take-home messages: Going back to basics prepares students to systematically assess and treat sick patients at a very simple level.
Building on this ABC foundation throughout the clinical years of the MBChB programme will allow future graduates to be better prepared for practice.

2AA/9
An explorative qualitative study of learners' reactions and experiences after Advanced Life Support training

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Background: A structured approach to managing emergency situations is often taught in simulation-based training (SBT). However, studies have shown that over time problems arise with practicing the learned skills. The aim of this study was to identify learners' reactions and experiences after having attended an Advanced Life Support (ALS) course.

Summary of work: A constructivist grounded theory approach was used. Semi-structured interviews were conducted by telephone with prior ALS-course attendees. A purposive sample of 16 was recruited.

Summary of results: Interviewees described that they had become more systematic in their approach to managing patients in real-life both in the acute-setting and during ward rounds and in teaching. However, poor ALS performances were experienced in situations where not all team members had the same ALS-structured approach.

Conclusions: The main issues identified in the study relate to transfer of skills. The results indicate that the efficiency dimension of transfer is taught well in the ALS courses, but that the form and content of these highly structured courses lacks potential to stimulate the innovative dimension.

Take-home messages: Additional training with focus on innovation is needed to improve transfer of ALS competence from the simulation to the real-life setting.

2AA/10
An evaluation of paediatric and neonatal life-support training for clinical and pre-clinical students

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Background: Experiential learning is essential for paediatric and neonatal life-support training, and there are ongoing initiatives to extend teaching and learning opportunities to trainees and medical students.

Summary of work: The student-led Cambridge University Paediatric Society piloted a paediatric and neonatal life support training workshop for pre-clinical and clinical students, consisting of 8 life support scenarios facilitated by 4 consultants and 4 paediatric trainees, where students were required to lead simulated resuscitation. Twenty-three students completed retrospective questionnaires assessing teaching quality and gain in confidence using the 5-point Likert scale.

Summary of results: There was no significant difference (Likert scale, using Mann-Whitney-U) between the teaching quality of non-consultant (4.58) and consultant-led (4.59) scenarios. The pre-clinical and clinical groups found the teaching scenarios equally useful overall (4.67, 4.5), with all students reporting increased confidence in dealing with real-life situations (3.87).

Conclusions: Running practical scenarios provides good teaching opportunities for junior staff; and they were as useful as consultant-led teaching. The training day should be offered to pre-clinical students, who find it as useful as clinical students.

Take-home messages: Training workshops can be efficiently organised by medical students, and delivered by both senior and junior staff to students with a range of clinical experience.

2AA/11
Needs assessment of CPR competency according to AHA 2010 through Interns of Kashan University of Medical Sciences in 2012

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Background: Physician are so effective as CPR team managers and performers but unfortunately no CPR training program has been implemented in Kashan University of Medical Sciences, also the data of interns' CPR competency level was lacking.

Summary of work: To evaluate the interns' CPR competency a valid theoretical test and OSPE (Objective Structure Practical Exam) based on AHA2010 CPR protocol was carried out through focus groups.

Summary of results: The mean of students' knowledge test score was 9.97/20±1.55 and skill test mean score was 10.74/20±2.33. The most challenge full item was chest compression. The most successful item was opening airway.

Conclusions: Due to the lack of interns' CPR competency, specific education is needed.

2AA/12
Do consultation skills survive in clinical clerkships?

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Background: In a consultation students have to combine medical content and the interaction with the patient. This study explores if and how consultations learnt before are - during clerkships- transferred to real practice.

Summary of work: Six focus group discussions were conducted with pre-clerkship and clerkship students. Focus groups were audiotaped, transcribed verbatim and analysed using NVivo.

Summary of results: Students feel prepared to communicate with the patient and master the technical examination skills. In the domain of medical thinking students feel insecure. The medical curriculum provides students with knowledge on diseases; in real practice patients present with complaints. Students learn to conduct a consultation by doing, using the

consultation model. This model helps students to be patient-centered and to structure the medical content. At first contact students show a lot of resistance against the model. Practicing consultations over again leads to acceptance of it. However, during clerkship there is a variable opportunity for it and students seldom see their clinical supervisors using it. Surrounded by role models who follow their own style and rarely give feedback, students rather tend to mirror those role models.

Conclusions: The consultation model must be trained several times within a variety of situations until the model is perceived as natural and applicable in all circumstances. Secondly, students must be trained critically observing role models before reflecting on their own behavior. Thirdly mentors should be trained how to give students feedback during their daily practice.

Take-home messages: In the teaching of consultation skills is the focus on the curriculum, the students and the clerkships essential.

2AA/13
Teaching effective communication to medical residents

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Background: In recent years, patients seek more information from physicians; they search the internet and come up with questions and doubts; on occasions they react aggressively to physicians. In addition, the current patient-centered approach requires physicians to improve their effectiveness in data-gathering as well as attaining patient compliance. The competent physician must develop effective communication skills to cope with these professional challenges. The purpose of the current paper is to suggest a model for teaching effective communication to residents.

Summary of work: A 1 1/2 day workshop designed to teach effective communication has been offered over the past 10 years to each new cohort of residents in all disciplines at a university teaching hospital. At the workshop, participants recorded difficult encounters with patients or their relatives, were taught a model of effective communication and role-played difficult encounters with patients. This was followed by feedback and group discussions.

Summary of results: The evaluation data to be presented reflected a high appreciation of the workshop.

Conclusions: The workshop added to prior knowledge and skills.

Take-home messages: Results emphasize that teaching effective communication skills has a crucial place in post-graduate professional development.

2AA/14
Evaluation of "Situation Background Assessment Recommendation (SBAR)" model for improvement of communication skills in residency training in OB-GYN

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Background: SBAR is a standardized communication template, adapted from the U.S. Navy that leads to a precise and complete information exchange during consultation. This model was introduced to improve the residents' communication skills in critical situations.

Summary of work: A survey of satisfaction in the communication skills of OB-GYN residents was conducted. To improve the communication skills, the SBAR technique was introduced. Four scenarios were used as practice in a one-day workshop before launching into routine work. An evaluation was conducted after the completion of one year using a 5-item questionnaire including; 1) a well-structured consultation 2) precision of language used 3) assessment of patients before consultation 4) recommendations and 5) overall satisfaction of consultation.

Summary of results: A majority of staff doctors and residents accepted this communication technique and subjectively noticed the improvement of residents' consultation. However, an evaluation by using the Likert scale has shown a slight improvement in only one parameter, the recommendation part.

Conclusions: SBAR is a well-structured pattern for communication in critical situation. To effectively deploy the new communication technique, it needs acceptance, time, encouragement, and positive reinforcement.

Take-home messages: The SBAR technique is a simple tool to improve communication skills.

2AA/15
"When I was the patient" experiential learning program for Postgraduate Year 1 (PGY1) residents: An educational innovation for enhancing holistic healthcare

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Background: Healthcare delivery has multiple dimensions and is patient-centered. So must medical education. 21st medical education has been more innovative. The objective of this program was to investigate the impact of experiential learning for postgraduate year 1(PGY1) residents who will be trained for one year at this training center. We hope through this program to let them observe local patient culture, and enhance their holistic healthcare in clinical practice.

Summary of work: We have invited 16 PGY1 residents to join this program and 7 of them have attended with consent. A random disease such as abdominal pain or chest pain was selected as an inpatient. They had experienced all hospitalization process, such as waiting for admission at emergency department, on IV, and further procedures related to the symptoms. Stay overnight was necessary to complete this program. Afterwards we collected reports with feedback for reflection.

Summary of results: Through this program, all of them (100%) can understand how patients feel when they faced unfamiliar medical environment and procedures. Moreover, through reflection, they would like to be more sympathetic with their patients, to be more patient in communicating with them, and to give them patient-centered healthcare services.

Conclusions: Through experiential learning program, trainees can have strong reflections with positive perceptions in order to induce their self-awareness and improve their capability for social care.

Take-home messages: A PGY1 training program with some innovations like experiential learning can enhance trainees' holistic healthcare abilities not only medical knowledge but also the humanity.

2BB Posters: Written Assessment

2BB/1
Pros of negative marking at multiple-choice postgraduate medical assessment

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Background: European postgraduate medical assessment developed during the last 25 years. Currently, 99 disciplines have their European postgraduate assessments, and all use MCQs.

Summary of work: In 2010, the European Board of Ophthalmology (EBO) decided to introduce negative marks for the MCQs. To study the influence of negative marks on the performance/reliability of the examination, the following statistical performance parameters of test items have been compared: P-value, Rit-value, Cronbach-alpha and 3-parameter item-response analysis.

Summary of results: A decrease in average P-value ($P < 0.66$) was observed compared to the situation without negative marks ($P > 0.75$). An increase in average Rit-value ($Rit > 0.15$) was observed compared to the situation without negative marks ($Rit < 0.15$).

An increase in Cronbach-alpha (> 0.85) was observed compared to the situation without negative marks (< 0.80). 3-parameter item-response analyses revealed that almost none of the questions was influenced by guessing correctly (average $c \sim 0$), while without negative marks all questions were influenced by guessing correctly (average $c \sim 0.33$).

Conclusions: Introduction of negative marks at the EBO examination, did lead to a decrease in item-facility (P-value)

due to less "wild" guessing; an increase in Pearson correlation (Rit-value) between item and total scores and an increase in reliability (Cronbach-alpha). 3-parameter analysis showed that the portion of correct answers due to guessing is negligible with the use of negative marks.

Take-home messages: Introduction of negative marks for the MCQs has proven successful at the EBO examination.

2BB/2
Continuing professional development on item writing: piggybacking on residency demands

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Background: The multiple-choice question (MCQ) is the most commonly used type of test item in graduate and continuing medical education examinations. Despite being experts on Medicine, faculty members clearly feel uncomfortable about constructing items for high stakes exams.

Summary of work: Seven workshops for faculty development and item writing were run during a four-month period (3 hrs every other week). Ten faculty members of internal medicine (IM) Department plus two facilitators worked together. The meetings had two moments: constructing and reviewing (in a panel) the items. At the end participants answered a retro Pre & Pos questionnaire focused on the gains they had during the process.

Summary of results: The retro Pre & Pos survey showed that, despite being experienced specialist physicians and teachers, most of the participants recognized increase in their knowledge and capability to construct and analyze the quality of items to be used in high stakes exams. A 100-item exam was built and used to assess 1920 applicants to the residency program.

Conclusions: Compared to previous years, there was much less complaints about flaws in this exam.

Take-home messages: Besides increasing quality of items for the residency exam, training faculty on item writing creates an opportunity for faculty development, which will be useful also for undergraduate assessment.

2BB/3
Teaching medical educators to create high quality multiple choice questions: a novel workshop

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Background: Multiple choice question (MCQ) exams are useful only if of high quality (HQ). Poor quality MCQs test recall not comprehension; and have poor validity, reliability and discrimination. We developed a workshop for physician educators to create HQ MCQs. A literature search of Medline, EBSCO, ERIC, and Scopus databases (key words: "Multiple Choice Question", "Creation", "Development" and "Workshop") revealed no similar workshop.
Summary of work: Criteria for HQ MCQ creation were distilled from the literature into 7 novel rules upon which a one hour workshop was developed.
Summary of results: 8 workshop participants were asked to submit one MCQ based on Canadian undergraduate medical education objectives. Two MCQ exam experts independently judged each MCQ for exam suitability and compliance to the 7 rules. 1 MCQ was rejected by both experts and 7 MCQs were accepted by both experts (K=1.0, 95% CI= 1.0-1.0). The rejected MCQ complied to a mean of 5 rules (K=1.0, 95% CI=1.0-1.0) and the accepted MCQs complied to a mean of 6.9 rules (K=0.79, 95% CI= 0.39-1.19).
Conclusions: This workshop is feasible to administer to physician educators. Post workshop, educators were able to create HQ MCQs.
Take-home messages: Creating HQ MCQs is difficult but can be accomplished by physician educators after appropriate faculty development.

2BB/4
Development of a software to construct Single Best Answer Multiple Choice Questions

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Background: Single Best Answer (SBA) type Multiple Choice Questions (MCQ) are considered a valid tool of assessing problem solving and testing factual knowledge placed in context of clinical situations. However, construction of good quality SBA MCQs is often arduous and time consuming.
Summary of work: Medical Education Development And Research Centre, Faculty of Medicine, University of Colombo, Sri Lanka developed an MCQ creator which provided an electronic template to construct SBA MCQs. The MCQ creator consists of a series of menu options designed based on item construction guidelines. The menu options are grouped according subject areas and provide a stem, lead in question and five responses that constitute the SAB MCQ. Choosing from menu options will produce a draft MCQ which can be edited and formatted.
Summary of results: Software to generate SBA MCQs was created. The database consists of 31 lead-ins and approximately 5000 response options. The MCQ creator is

able to generate questions in 14 subject areas including anatomy, biochemistry, clinical medicine, community medicine, dermatology, haematology, infectious diseases, obstetrics and gynaecology, pathophysiology, paediatrics, physiology, psychiatry and surgery.
Conclusions: The MCQ generator provides a template for constructing SBA MCQs which can be edited and refined.
Take-home messages: Information technology is a useful tool in overcoming logistical challenges in medical education.

2BB/5
Quality indices of parallel multiple-choice questions

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Background: According to many small group rotations with separated tests for grading, using the same test may induce injustice for the latter. Parallel tests constructed with the same objectives are appropriate but quality index should be analyzed as well.
Summary of work: In order to compare quality indices between 2 parallel multiple choice questions (MCQ), two parallel tests of pediatric discipline for 5th year medical students in 2011 of academic year were developed. There were 80 items with 5 options per test for 15 students in each group. Twenty-one items for parallel questions were modified using the same objectives and specific tasks such as health maintenance, mechanism of disease, diagnosis and management. Data analyses were performed for comparison of difficulty index (p), discrimination index (r) and KR-20.
Summary of results: Average scores were 55.8% and 51.8% respectively. KR-20, difficulty index and discrimination index were not different between 2 tests. For subgroup analysis of 21 parallel questions, p-index was 0.56, 0.27 and r-index was 0.27, 0.14 respectively which were not also significantly different.
Conclusions: There were no statistical differences of quality indices for 2 parallel MCQs.
Take-home messages: Parallel tests with the same objectives could possibly be developed for the same level of quality index in order to minimized biases and injustice for assessment in many small groups.

2BB/6
Correlation between written medical student case reports and key features examinations

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Background: Written case reports and key features examinations require knowledge, synthesis, decision making and writing skills. The objective of the study is to determine

the correlation between the patient assessment sections (PAs) in the written case reports and key features (KFs) examination scores of the fifth year medical students during pediatrics rotation.

Summary of work: Retrospective data were collected and analyzed from the KFs, multiple-choice questions (MCQs) examinations at the end of an 8-week pediatrics rotation and the fourth year cumulative GPAs of 115 medical students for the academic year 2010. The mean scores of 5 PAs graded by five separate teaching staff members were compared to the KFs, MCQs and GPAs.

Summary of results: Overall, there is a low correlation between the PAs and KFs scores, MCQ scores and GPAs (Pearson's r=0.428, 0.3038, 0.475, respectively). Subgroup analysis into interquartile range units found a statistically significant correlation between KFs, MCQs, GPAs and PAs (p = 0.006, 0.021, 0.0002, respectively). The students whose PAs and GPAs were below the 25th percentile significantly also had either KFs or MCQs scores below the 25th percentile (p=0.008).

Conclusions: There is a good correlation between the PAs and KFs scores, MCQ scores and GPAs.

Take-home messages: Written case reports of medical students can be used to predict KFs and MCQs examination scores.

2BB/7
Scientifically setting a cut score for an end of clinical rotation written exam

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Background: Arbitrary cut scores (CS) are often used for end of clinical rotation (EoCR) written exams. The modified Angoff method (MAM) is reliable and valid to scientifically set (SS) CS but is underutilized in our institution. We studied the feasibility of using SSCS for an EoCR exam.

Summary of work: 8 physician educators responsible for an EoCR exam were calibrated via email. They then assigned the exam a SSCS of 68% using the MAM. Because faculty were unwilling to raise the CS so drastically over the traditional value of 50%, a Delphi process reset the CS to 60%.

Summary of results: 142 fourth year medical students wrote the EoCR exam.104 achieved the SSCS of 68%; 31 scored between 60-68%; 6 scored between 50-60% and 1 scored below 50%. 7 students failed, 6 more than if the arbitrary CS of 50% was used.

Conclusions: SSCS for EoR MCQ exams are feasible, but barriers to full implementation exist. The final CS was defensible but 31 students passed despite not reaching the SSCS. This study increased awareness of the importance of SSCS. Our future goal is to further inform faculty of the process to allow full implementation.

Take-home messages: SSCS should be used in exams assessing competency.

2BB/8
Deficits in anatomical knowledge of German medical students analyzed by progress testing

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Background: The level of German medical students' anatomical knowledge is discussed controversially. Deficits are mainly criticized by members of surgical disciplines, while the importance of basic science knowledge for medical practice is generally accepted. So we analyzed the level of anatomical knowledge using medical students' performance in progress testing.

Summary of work: 33 anatomical questions of the Berlin Progress Test Medizin were chosen for analysis. Results of all participating medical students after the fourth year were included. The benchmark for evaluation was created by standard setting procedures (modified Angoff procedure: Yes/No-Method) with anatomical experts of five German medical faculties.

Summary of results: Independent of home faculty, teaching experience or educational history anatomical experts agreed on the minimum required performance allowing the calculation of a single standard from the different standard setting procedures. Students' performance (29.9% correct answers) was dramatically worse than the standard (60.4%). Students had most difficulties in answering questions requiring the application of anatomical knowledge to clinical problems.

Conclusion/Take-home messages: Our results confirm deficits in anatomical knowledge of German medical students indicating particular difficulties in application of knowledge in clinical settings. We do not know whether students' primarily acquired knowledge is insufficient or if it declines during advanced studies.

2BB/9
Comparison between key feature exam and multiple choice questions in internal medicine department of Shiraz medical school

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Background: Clinical reasoning skills play a major role in the ability of doctors to make diagnosis and reach treatment decisions. This study is a report of use an innovative assessment tool: key feature exam, in problem solving domain. The main purpose of this study was to compare key feature results with routine multiple choice questions in internal medicine department.

Summary of work: Final year internal medicine students (n=100) of Shiraz Medical School participated in this study. They implemented in multiple choice questions exam; then participated in key feature exam. Reliability, item's difficulty level and item's total correlation as discriminative index, about key feature exam have been considered.

Summary of results: The students in key feature exam have min=23.7, max=41.2, mean=30.91 from 44. The reliability of key feature exam was 0.68 (Chronbach's alpha). The item's difficulty level scores were between 0.3-0.8 in all key feature questions and item's total correlation were 0.16-0.54. The correlation between key feature exam and multiple choice questions exam was 0.25 (with p value <0.05).

Conclusions: The results of the present study shows that students had better scores in key feature examination in comparison to routine multiple choice questions. Mild correlation between key feature results and multiple choice questions may be indicated of different domain measurement of these two tests: clinical reasoning in key feature and knowledge in multiple choice questions.

Take-home messages: Wider studies in different departments are needed to improve efficacy of key feature exam..

2BB/10
Development of a web-based assessment tool for students, lecturers, and curriculum designers

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Background: Ordinary certificates don't provide enough information to assess a student's performance. A system combining summative course results and formative progress testing can give detailed feedback on the development of knowledge in various domains in comparison to their fellow students. Different cohorts can be compared in order to analyze their gain in knowledge prior and after certain courses.

Summary of work: A common database for both the summative and formative results had to be designed. After creating a profile of requirements together with the user groups involved, an interface was developed that allows access to the variety of evaluations. Students are able to evaluate their progression in comparison to their peer group. Additional mentoring on strengths and flaws is possible. Lecturers can assess the transfer of knowledge of their courses. Furthermore, correlations between the summative and formative results can be examined.

Summary of results: A tool was developed which satisfies the predetermined requirements yet remains to be adaptable. High output for all user groups was achieved.

Conclusions: Careful planning and the integration of all available results lead to a system offering any degree of granularity as desired.

Take-home messages: Students' results and their consistent and transparent visualization offer broad possibilities for assessment.

2BB/11
A secure web based assessment system for the school of medicine

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Background: Security is one of the main problems in web based assessment systems, particularly cunning. Online assessment has been largely debated because of difficulties with properly authenticating assessment environment.

Summary of work: Implementation of this work mostly depend on local network that includes web service and dependable users. The difference between this assessment method and usual web based assessment package is to gain more security for assessment environment.

Summary of results: Over 5 years of assessment data have been recovered and found that 0.01% of the students use network cunning methodology to cheat the examination. Nowdays computers have become more user friendly so that students tend to learn knowledge of computer network environments and gain access to assessment resources. Web based assessment is usual to be used in medical education and it is obvious that a web environment is a system of publication of resources in which with a little knowledge of computer network access to those resources before an examination is not so hard.

Conclusions: Using web based environment in a large scale assessment requires ensurence of security. We demonstrated that using simple methods probable cunning issue can be up to lowest point

Take-home messages: No exam resource should be included in web server environment.
-off line environment (local network) is necessary for assessment.
-phone(any kind) and USBs can be used as an cunning access device.

2BB/12
Program of meta-evaluation of exams to reach validity of the response process: a case study at the Faculty of Medicine of the University of Porto (FMUP)

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Background: The response process is evidence of data integrity, assuring that all sources of error associated with testing are controlled. To achieve this endeavor it is necessary to obtain written information about: the test and instructions of response, the procedures to assure score accuracy and materials delivered for the interpretation of classifications. This work aims to evaluate a 5-year implementation of a meta-evaluation program, for assessing quality of tests in FMUP, as validity of the response process.
Summary of work: Since 2006, a protocol of optical reading, assessment of quality of multiple-choice tests was developed: design of a response form; reading and verification of responses, delivery of a report with item analysis and revision of the final scores.
Summary of results: This program was requested in 2011 by 22 (69%) of the disciplines of the basic sciences (years 1, 2 and 3 of the medical course) and involved 4043 and 3758 exams (1st and 2nd semesters).
Conclusions: The assessment of validity of the response process allowed achieving a reliable and quick correction of exams, introduction of the standard error, to eliminate non-discriminating items, equating of exams and elaboration of reports on meta-evaluation.
Take-home messages: The response process program allows implementing evidence-based exam decisions.

2CC e-Posters: Simulators and Simulation

2CC/1
OSCE – The Real Deal

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Background: Clinical skills (CS) training in simulation laboratories (SL) is characterized by predictable and stable learning and testing environment, while work on wards is more unpredictable. Research question: Is there a significant difference between Year-3 medical students' Venepuncture Procedure OSCE results when tested in SL and on wards?
Summary of work: 17 Year-3 medical students went through CS training in our SL. We tested their venepuncture skills using OSCE in SL and then on wards under supervision of senior nurses. They also graded technical difficulty and stressfulness of both procedures on a scale from 1 to 5. Data was analysed using SPSS Statistics Programme.
Summary of results: Students gained averagely 29.0/30.0 (SD±1.3) points in SL and 28.5/30 (SD±1.9) points on wards. Average completion time was 307 and 614 seconds, respectively. There is no significant difference in points (p=0.425), but a significant increase in completion time on wards compared to OSCE in SL (p<0.001). Students found venepuncture on wards significantly more technically demanding (average grade 3.9/5) and stressful (4.3/5) than in SL (2.1/5 and 1.9/5, respectively), p-values being <0.001 and <0.001, respectively.
Conclusions: Students can successfully perform learned CS on wards, but find it more technically demanding and stressful.
Take-home messages: Students can successfully transform their learned CS into clinical practice.

2CC/2
Maximising learning opportunities in a changing clinical practice environment: learning affordances in a simulated practice environment within a BSc (Hons) Diagnostic Radiography degree

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Background: Changing patterns of patient imaging have reduced diagnostic radiography students learning opportunities within the clinical practice environment (CPE). Their learning must move away from a traditional apprenticeship model if they are going to be able to engage effectively with their potential clinical learning opportunities. A programme of learning was developed in a Simulated Practice Environment (SPE) to address this, building on key aspects: deliberate practice, reflection and feedback.
Summary of work: A case study utilising surveys, focus groups and document analysis explored students learning within the SPE, and their perceptions of benefits on their learning in the CPE.
Summary of results: Learning affordances offered within the SPE have been clearly indentified. The results demonstrated benefits in students' preparation for placement, gaining

clinical skills, communication skills and on reflection on placement experiences. Safety and time to learn within the SPE, provides the students with the freedom to ask questions and removes concerns over patient's welfare.

Conclusions: If future radiography students are to be trained to meet standards outlined by their professional bodies, using learning in SPE's could be essential. To be effective this must be central to the curriculum utilising current research in simulation education.

Take-home messages: The learning affordances in SPEs can prepare students to transfer effectively into CPEs.

2CC/3
The next step in burns training?

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Background: The National Burns Care Review estimated that 1,000 patients are admitted to hospital in the UK with severe burns every year. Up until now, burns training has often been delivered in a moulage format, largely thanks to the success of the Emergency Management of Severe Burns (EMSB) course.

Summary of work: We propose a new format for burns training that incorporates the technologies available in the field of simulated training. Using a high fidelity simulation facility in Royal Preston Hospital, we devised an education programme for plastic surgery trainees in the region. Several scenarios were devised with key skills being identified, including, decision-making, teamwork, communication, clinical leadership, and ultimately the application of clinical skills.

Summary of results: Simulation training was found to be an excellent adjunct to current methods of learning in burns and human factors by all of the trainees involved; every participant felt they would like more simulation training incorporated into their education.

Conclusions: Simulated training provides a platform for trainees to hone skills that may be called into practice on an intermittent basis; burns is an ideal topic for virtual learning because of the relative infrequency of major burns.

Take-home messages: High-fidelity simulation may hold the key to improving burns training and management.

2CC/4

Teaching Respiratory Medicine in the ambulatory setting. Evaluation from a student and teacher perspective

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Background: As the majority of doctor-patient encounters occur in the ambulatory care, clinical teaching in this setting is important. Aims: To assess teacher and students' views about the strengths and weaknesses of interacting with real and simulated patients for teaching clinical skills related to respiratory medicine in the ambulatory setting.

Summary of work: Fourth-year medical students were exposed two weeks to real and simulated patients with common respiratory problems (COPD, asthma, smoking and sleep apnea syndrome) in an outpatient clinic. Each patient encounter was followed by tutors and peer feedback. At the end of the rotation, students evaluated the program and the tutors (N=596 from 2004-2010). Six tutors were interview and asked to evaluate the rotation; interviews were analyzed using qualitative methods.

Summary of results: Most students found that real and simulated patient encounters were instructive and helpful. Tutors identified main factors that facilitate teaching dependent on learning-module, students and teachers, and factors that hinder teaching.

Conclusions: The interaction of medical students with real and simulated patients for teaching basic clinical skills in the ambulatory setting was evaluated favorably by teachers and students.

Take-home messages: Qualitative methodology allowed us to contrast the information obtained from the students with the perspective of teachers, identifying issues that would help improve the teaching and/or the degree of satisfaction of teachers and students.

2CC/5

The Mobile Surgical Simulator – Views of Junior Surgical Trainees

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Background: Total training time for surgeons is falling and in response a variety of novel training methods are evolving, including the use of simulation. It is often perceived that significant training time is "lost" between cases on operating lists. The views of trainees on the use of simulation to maximise training between cases has not been described.
Summary of work: An anonymous questionnaire was sent to junior surgical trainees (Post graduate years 2-4) to explore their views on their current surgical exposure and the use of the mobile surgical simulator, a laparoscopic and open surgical simulator, within theatres.
Summary of results: A total of 14 trainees responded to the questionnaire. They reported between 12 – 16 hours per week of allocated theatre time. Of this time an average of 3 hours was "lost" between cases. All reported that they would use the mobile surgical simulator during this "lost" time and felt it would be beneficial.
Conclusions: "Lost" theatre time represents a significant hidden reduction in available surgical training. The provision of a mobile surgical simulator within the theatre department is one solution to this problem supported by trainees.
Take-home messages: The mobile surgical simulator can be a beneficial resource for trainees to reduce the impact of "lost" theatre time on training.

2CC/6
Pre-clinical Undergraduate Ward Simulations – Too Much Too Soon?

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Background: Ward simulations are becoming an increasingly common feature of undergraduate medical education. Several key benefits of ward simulation have been identified, including development of competence, professional boundaries and interprofessional skills. The stage of training at which these experiences are offered remains a point of debate.
Summary of work: At the University of St. Andrews, an integrated pre-clinical undergraduate medical course is taught and as part of the course, students in the third (final) year undertake a ward simulation exercise. The students are expected to act as a Foundation Year 1 doctor and must prioritise tasks appropriately. Following the exercise, students were given a questionnaire to complete, specifically focussing on whether they felt this was a beneficial exercise.
Summary of results: This study will report on the student experience of a ward simulation exercise carried out as part of the pre-clinical undergraduate programme.
Conclusions: A ward simulation exercise may be beneficial in identifying knowledge gaps and provides an opportunity for students to practice prioritisation skills. It may also aid in the development of professional behaviours and attitudes in an interprofessional environment.
Take-home messages: The timing of these ward simulation exercises is key in maximising the benefits associated with such experiences.

2CC/7
The effects of a combination of simulated patients with manikin on the achievement of intravenous cannulation skill

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Background: Physicians are required to have competency in performing clinical procedures that consist of technical skills, communication skills and other professional behavior. However, these skills are often taught separately while studying in the clinical skills laboratory. This study aimed to determine the effect of procedural skills learning using a combination of simulated patients with manikin on the achievement of students' procedural skills
Summary of work: This experimental study used a post-test only control group design. The research subjects were 60 third semester students of 2010, Medical School, YARSI, taken with cluster random sampling and random assignment to split the subjects into the control group (learning only with manikin) and the intervention group (learning combination using patients and manikin). The measured skill was the intravenous cannulation skill using the Integrated Procedural Performance Instrument (IPPI) rating scale and questionnaires on the perceptions of procedural skill learning. The statistical analysis used Mann-Whitney test and Independent t-tests.
Summary of results: The mean value of the total IPPI rating scale of the intervention group was significantly higher (p 0,8) than that of the control group.
Conclusions: Procedural skills learning using a combination of simulated patients with manikin improved the achievement of intravenous cannulation skills.
Take-home messages: Learning procedural skill combined with simulated patient will bring the student more close to real context

2CC/8
Surgical Simulation at the KSS Deanery

Alex Magnussen (*St Marks Hospital, Colorectal Surgery, London, United Kingdom*)
Catherine McGuiness (*Royal Surrey County Hospital, Vascular Surgery, Guildford, United Kingdom*)

(Presenter: **Oliver Rawding**, Royal Surrey County Hospital, Guildford, United Kingdom)

Background: Simulation is becoming more popular as a clinical teaching method. KSS recently organised a dedicated surgical simulation day, which was a huge success.

Summary of work: We used the state-of-the-art simulation suite at the University of Surrey, which includes wards, ITU, theatre and domestic environments. We set up 6 surgical scenarios and 4 skills stations. These included: TURP syndrome, teenage ectopic pregnancy, acute post-operative confusion, incidental breast cancer out-of-hours, testicular torsion, colovesical fistula, surgical airways, USS-guided cannulation and chest drain insertion. The faculty included six senior consultants and clinicians with an interest in simulation. 10 core surgical trainees attended and each took part in a scenario. They interacted with other healthcare professionals and actors. They were observed by the faculty and their peers and received feedback from both. Then a teaching session relevant to the scenarios took place.

Summary of results: The feedback received was universally positive, with all candidates finding the day very useful for their on-going surgical practice. Trainees expressed a wish for more opportunities to undertake simulation training in the future.

Conclusions: Dedicated surgical simulation days should become part of the core surgical training curriculum with opportunity to attend at least one session every year. Funding should be ring-fenced for this purpose.

2CC/9
The use of an airway management simulation to reinforce head and neck anatomy at Ross University School of Medicine

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Background: The goal of this simulation is to reinforce the teaching of head and neck anatomy to second semester medical students. This simulation demonstrates basic airway management including the airway devices, their use, advantages and contraindications.

Summary of work: Groups of 8 students were given instruction and practical experience using several airways including: nasopharyngeal , oropharyngeal , laryngo-tracheal airways and Endotracheal tube. Students also completed a pre simulation MCQ survey, and summative MCQs and OSCE examination.

Summary of results: Data from September 2010 through September 2011 was evaluated. 886 Students achieved an average MCQ score of 73.8% in summative exams from 2011 compared to pre-simulation survey test score of 52% from 89 students in September 2010. 617 students achieved an

average of 96% on summative simulation OSCE final examinations in January and May 2011.

Conclusions: These results show student improvement of understanding of airway management post simulation. Students also maintained their clinical airway management skills after simulation.

Simulation helped students retain knowledge of head and neck anatomy and airway management clinical skills.

Take-home messages: Although we feel that students' knowledge of anatomy was reinforced by this simulation, more data is needed to confirm long-term knowledge and skill retention.

2CC/10
Re-conceptualizing program development and evaluation in simulation-based training: an integrated approach

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Kathryn Parker (*Holland Bloorview Children's Rehabilitation Hospital, Academic Affairs, Toronto, Canada*)

(Presenter: Faizal A Haji, University of Toronto and the Hospital for Sick Children, The Wilson Centre and SickKids Learning Institute, 43 Corvette Court, Brampton L7A 2H8, Canada, faizal.a.haji@gmail.com)

Background: In typical simulation-based training (SBT) programs, development and evaluation processes are segregated. This approach is problematic, because the paradigm only evaluates whether programs 'work', not the more fundamental questions of 'how' or 'why' outcomes are achieved.

Summary of work: We propose an innovative model for program development and evaluation (PDE) that couples theoretically driven simulation development with a process and outcome based approach to evaluation. This is accomplished by using a variation of the CIPP program evaluation model and the motor learning theory called the Challenge Point Framework.

Summary of results: The proposed model calls for an evaluation of educational context; assessment of trainees' abilities; and setting task difficulty by adjusting simulator complexity, conditions of practice and contextualization of the simulation environment. A key advantage of our formulation is the iterative feedback provided by assessment of learning outcomes, which enable educators to adjust SBT task difficulty to optimally challenge learners.

Conclusions: By viewing program development and evaluation as critically co-dependent, we have developed an innovative model for PDE that couples evaluation of planned and emergent processes and outcomes with theory-based simulation development in an iterative fashion.

Take-home messages: We have devised an integrated, theory-based model for PDE capable of addressing the complexity of learning contexts in SBT.

2CC/11
Mannequins in the labour ward: evaluation matters

Huon Snelgrove *(St George's Healthcare NHS Trust, Education, London, United Kingdom)*

(Presenter: **Emma Evans**, St George's Healthcare NHS Trust, Anaesthesia Dept, 1st Floor Grosvenor Wing, Blackshaw Road, Tooting, London SW17 OQT, United Kingdom, Emma.Evans@stgeorges.nhs.uk)

Background: The Royal College of Obstetricians and Gynaecologists, The Royal College of Anaesthetists and the Royal College of Midwives all recommend implementation of multi-professional emergency training. The Clinical Negligence scheme for Trusts mandates obstetric emergency rehearsal (drill) training for maternity staff.

Summary of work: To allow rehearsal of obstetric emergencies, we developed an in situ simulation training programme at St George's Hospital, London, using medium fidelity mannikins. We used questionnaires, interviews with team members and documented organisational changes to explore the effects of the programme using Kirpatrick's model (1998).

Summary of results: Salient themes were that simulation training 'socialised' different team members and improved understanding of 'effective' communication. Ergonomic observations led to physical changes in the clinical environment. Organisational changes included network training across clinical boundaries.

Conclusions: Our data suggest that some beneficial effects were achieved at different levels of Kirkpatrick's model, though evaluating educational impact in dynamic unstable teams is a difficult task, especially in an audit culture which demands measurable clinical outcomes.

Take-home messages: The challenge is to make training part of a permanent, comprehensive and integrated strategy so that individuals, teams and networks in the system of care have regular access to the training over extended periods of time.

2CC/12
Simulation of emergency situations as an integrated part of education for interns at the Sahlgrenska University Hospital, Gothenburg

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(Presenter: Maria Carlson Bruehl, Sahlgrenska University Hospital, AT Kansli, Administration Staff, Torggatan 1a, Mölndal 43135, Sweden, maria.carlson.bruhl@vgregion.se)

Background: As part of their medical training, interns in Gothenburg receive an introductory 2-day course of emergency situation simulation with a computerized doll. Highly appreciated, it is seen as an opportunity to gain confidence in a safe, apologizing environment. As part of our internship we designed, organized and evaluated a follow-up day of simulation, aiming at further increasing the interns' confidence.

Summary of work: We participated in an instructor-course in simulation. From a database with medical cases illustrating situations that are commonly encountered in an emergency room we extracted 4 cases exemplifying different organ

systems. 2 physicians in Internal medicine were recruited as medical experts and we organized a 1-day course. Prior to simulation the participants were asked to write down their expectations and apprehensions. At the end of the day, to evaluate the experience as a whole.

Summary of results: 8 interns participated, with varied medical experience. Despite this, their expectations and apprehensions were very much the same. The evaluation showed that all found the simulations rewarding at both a personal and a clinical level.

Conclusions: Through medical simulation interns gain confidence and medical knowledge regardless of their previous experiences. As a result they are better prepared in emergency situations.

Take-home messages: Through simulation, interns stand better prepared.

2CC/13
The effectiveness of a novel resuscitation teamwork training model "A-C-L-S (Airway-Circulation-Leadership-Support)" in simulated cardiac arrests

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Shih-Li Tsai *(National Taiwan University Hospital, Department of Medical Education, Taipei, Taiwan)*
Yun-Yuan Chen *(National Taiwan University Hospital, Department of Medical Education, Taipei, Taiwan)*
Matthew Hui-Ming Ma *(National Taiwan University Hospital, Department of Emergency Medicine, Taipei, Taiwan)*
Yen-Hsuan Ni *(National Taiwan University Hospital, Department of Medical Education, Taipei, Taiwan)*

(Presenter: Chih-Wei Yang, National Taiwan University Hospital, Department of Medical Education, No.7, Chung-Shan South Rd., Taipei 100, Taiwan, cwyang0413@gmail.com)

Background: The current guidelines for advanced life support (ALS) emphasize the importance of teamwork during resuscitation. A teamwork training model called Airway-Circulation-Leadership-Support (A-C-L-S), comprising 4 domains: Airway (A), Circulation (C), Leadership (L), and Support (S), was developed. The effectiveness of A-C-L-S model applied in simulated cardiac arrests for emergency medical technician paramedics (EMT-Ps) were evaluated.

Summary of work: A 10-minute video demonstrating this model was introduced to ALS-certified paramedics between two simulated cardiac arrests. A global rating using 5-point Likert scale was administered to evaluate perception of teamwork before and after the introduction. Parameters of resuscitation performance, including time to first chest compression, first shock, successful intubation, and first medication, were recorded.

Summary of results: In Sept. 2011, forty-five paramedics were grouped into 9 groups. The global ratings of teamwork perception were significantly higher after the training (8.24 vs. 7.30, $p<0.001$). Time to first chest compression and successful intubation were significantly lower after the training (52.56 vs. 90.89, $p<0.001$, and 332.11 vs. 353, $p<0.05$ respectively).

Conclusions: Our novel team-based A-C-L-S training model can facilitate the perception of teamwork and improve resuscitation performance.

Take-home messages: A brief video demonstration with a novel teamwork training model potentially can be incorporated into ALS training to improve resuscitation performance.

2CC/14

Comparison study between complex BLS manikin and simple BLS manikin for BLS skills training

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Background: Basic life support (BLS) training is important intervention. Simple manikin (Little Anne ®) that is human-like anatomy. While, complex minikin (Resusci Anne SkillReporter®) that is more similar with human, have skill monitoring. We would like to compare between simple manikin and complex manikin on BLS skill after training.
Summary of work: BLS for healthcare provider course attendants at KKU simulation center, Thailand were included. Participants received 1 hour lecture/video. They were divided into control group (simple manikin) and study group (complex manikin) by block randomization (sealed envelope technique). One instructors trained 4 participants in BLS steps (evaluation; activate EMS; chest compression; ventilation; AED). After the course, we tested knowledge, and skills by Resusci Anne Advanced SkillTrainer®.
Summary of results: We included 80 participants. Demographic data, post test BLS knowledge were comparable. BLS evaluation, activated EMS skills were comparable. Pulse check, chest compression position and depth were better in study group (p
Conclusions: Complex manikin showed better skill over simple manikin in some skills. Despite, there was similar anatomy, skill reporting showed incorrect skill and feedback to participants.
Take-home messages: Complex manikin with skill monitoring may improve pulse check skill and chest compression skill.

2CC/15

The experiences and the opinions of ACLS training instructors: a qualitative analysis of narrative data

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Background: Advanced cardiovascular life support (ACLS) training course is designed for healthcare professionals and is instructor-led classroom course for practice of simulated clinical scenarios. The participants are diverse with different age, professional field, clinical experience, knowledge, purpose and motivation. Despite the foundation for teaching such as instructional methods and strategies, instructors can experience diverse situations in hands-on training. The purpose of this study is to examine the experiences, problems, opinions and suggestions of instructors.
Summary of work: The material consists of narratives with 12 ACLS instructors. The data is subjected to qualitative analysis of narrative data.
Summary of results: The instructors pointed out that the poor motivated participants cause them difficulty and suggested diverse ways to motivate learners. They emphasized that active participation and open-minded communication is necessary for teamwork and leadership. They suggested that instructors should induce feelings of intimacy between participants and immersion to simulation, show sympathy and attention, and do customized education and individual feedback suited to individual learners.
Conclusions: ACLS instructors need to be able to facilitate individualized and specialized instructional methods and strategies for various healthcare professionals and make an effort to promote teamwork and leadership.
Take-home messages: This study can provide insights into various aspects of ACLS education instructors.

2CC/16

Attitudes of Surgeons Towards Learning with Simulation

Keval M Patel (*Addenbrookes Hospital, Department of Urology, Cambridge, United Kingdom*)
Fernando Bello (*Imperial College, Department of Surgery & Cancer, London, United Kingdom*)

(*Presenter:* Keval M Patel, Addenbrookes Hospital, Department of Urology, Hills Road, Cambridge CB2 0QQ, United Kingdom, keval.patel@doctors.org.uk)

Background: Junior surgeons' operative experience is decreasing dramatically. Simulation is one potential method for regaining operative experience. Accordingly, funding for simulated learning has increased. Despite this, surgical simulation is not currently used as widely when compared to other high risk industries. Additionally, there are no published articles regarding the barriers currently preventing its widespread adoption.
Summary of work: A questionnaire was distributed, containing four sections, an introductory section, two attitude analysis sections and a final section assessing benefits and barriers of simulation.
Summary of results: Most surgeons were supportive of educational principles and simulation in postgraduate surgery. Despite this, the use of simulation was low (1.5 hours/month) and, there was little consistency regarding

which benefits simulation could achieve. In addition, every responding surgeon believed that simulation had at least one and on average 3 barriers to overcome before widespread adoption could be achieved.

Conclusions: We conclude that despite current low usage rates, U.K. surgeons harbour support for simulation in surgical education. The most commonly cited barriers to widespread adoption are simulation's high cost and a lack of trainers.

Take-home messages: However, we suggest that by offsetting initial outlay costs against savings made in reduced theatre time, from reduced patient risk, by sharing costs between surgical departments and by incentivising training, these barriers may be overcome.

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SESSION 3: Simultaneous Sessions
Monday 27th August: 1345-1530

3A Symposium: The International 'Moral Maze' – can licensing professional assessments of clinical competence be made fair and fit for all qualified takers, regardless of their backgrounds?

Iona Heath *(President of the Royal College of GPs, United Kingdom)*
Kamila Hawthorne *(Deputy Clinical Lead for the CSA, United Kingdom)*
John Spicer *(London Deanery, United Kingdom)*
Melvin Xavier *(International Medical Graduate and 'First 5' GP, United Kingdom)*

Witnesses:
Celia Roberts *(Kings College London, United Kingdom)*
Adrian Freeman *(Clinical Lead for the CSA, United Kingdom)*
Kay Mohanna *(West Midlands Deanery, United Kingdom)*

The Symposium will examine the data surrounding the differential pass rates in postgraduate medical examinations, using the Clinical Skills Assessment of the MRCGP as an example case. Its objective is to encourage debate and raise awareness of the issues highlighted by this differential performance. The CSA consistently finds that International Medical Graduates perform less well than UK trained graduates. The Symposium will be run along the lines of the BBC programme 'The Moral Maze'. A cross-sectional panel will be allowed to question a team of 'expert witnesses', bringing out the issues for debate. There will be time set aside for audience debate.

3B Symposium: Defining Core-Competencies in Scientific Research for Undergraduate Medical Education: IAMSE Symposium

Adi Haramati *(Georgetown University, Washington DC, United States)*
Peter de Jong *(Leiden University Medical Center, Netherlands)*
Amy Wilson-Delfosse *(Case Western Reserve University School of Medicine, Cleveland, United States)*
Richard März *(Medical University of Vienna, Austria)*
Sandy Cook *(Duke-NUS Graduate Medical School, Singapore)*

In the final report of the MEDINE Thematic Network for Medical Education in Europe, named "The Tuning Project", no single level 2 competency is defined in the field of "Ability to apply research principles, methods and knowledge to medical practice and research". The rational behind this is to leave it open for individual countries or schools to define their own level of competencies in scientific research education. Already for several years IAMSE is exploring this field out of believe that science must continue to be the basis for the practice of modern medicine. Health science professionals must be able to combine compassion, understanding and communication skills with a readily accessible knowledge base and strong scientific research skills.

The symposium will try to identify level 2 competencies for scientific research in the medical curriculum. In a few short introductions the MEDINE report will be summarized and competency levels will be defined. In a general discussion with the audience a panel will seek for consensus on the research competencies needed by a health science student. This might be a start in defining the required competencies for research skills internationally.

3C Short Communications: Selection for Postgraduate and Undergraduate Programmes

3C/1
The development of a selection procedure based on the CanMEDS

Fred Tromp *(Radboud University Nijmegen Medical Centre, Department of Primary and Community Care, Nijmegen, Netherlands)*
Margit Vermeulen *(University Medical Centre Utrecht, Julius Centre for Health Sciences and Primary Care, Utrecht, Netherlands)*
Henk Mokkink *(Radboud University Nijmegen Medical Centre, Department of Primary and Community Care, Nijmegen, Netherlands)*
Anneke Kramer *(Radboud University Nijmegen Medical Centre, Department of Primary and Community Care, Nijmegen, Netherlands)*
Ben Bottema *(Radboud University Nijmegen Medical Centre, Department of Primary and Community Care, Nijmegen, Netherlands)*
Myrra Vernooij-Dassen *(Radboud University Nijmegen Medical Centre, IQ Healthcare, Nijmegen, Netherlands)*

(Presenter: Fred Tromp, Radboud University Nijmegen Medical Centre, Department of Primary and Community Care, PO Box 9101, Nijmegen 6500 HB, Netherlands, F.Tromp@elg.umcn.nl)

Background: The stakes of selection for postgraduate training are high. Selection processes therefore need to be credible, fair, and valid. Resident selection is frequently based on cognitive variables. Cognitive variables however, do not predict clinical performance. According to the literature, competency-based selection procedures is the method of choice. The question is how to develop a competency-based procedure.

Summary of work: In many countries, curricula are based on the CanMEDS. As a first step in the development of a new selection procedure for GP-training, we determined which of the CanMEDS-competencies should be targeted for the selection procedure. We organised focus groups to establish which of the CanMEDS-competencies should already be present before entering GP training. The second step was to determine which instruments should be used to assess these competencies. The third step was to test feasibility in a pilot study (N=43).

Summary of results: Consensus was reached on competencies Professionalism, Communication, Management and Medical Expertise. To test these competencies we used 4 instruments: a Knowledge Test; a Situational Judgement Test; a competency-based interview; and a series of three work related simulations. The procedure was feasible.

Conclusions: Following these steps it is possible to develop a selection procedure based on the CanMEDS.

Take-home messages: Other specialties could develop a competency-based selection procedure following these three steps.

3C/2
Evaluating the Validity of Situational Judgement Tests for Selection to General Practice in Australia

F Patterson (University of Cambridge, Psychology, Cambridge, United Kingdom)
C Roberts (University of Sydney, Medicine, Sydney, Australia)
M Grant (AGPET, Canberra, Australia)
R Hale (AGPET, Sydney, Australia)

(Presenter: F Patterson, University of Cambridge, Psychology, United Kingdom, fcp27@cam.ac.uk)

Background: Following successful local pilots, a Situational Judgement Test (SJT), a Multiple Mini Interview (MMI) and Referees reports were introduced nationally in 2011 to select candidates applying for training into General Practice in Australia. This is the first postgraduate selection process to combine a SJT and MMI.

Summary of work: The SJT focuses on non-cognitive domains (e.g. problem solving, professionalism, communication). SJT items were developed by trained item writers and a separate panel provided expert consensus on answers. The MMI comprised 5 stations each lasting 8 minutes. 1208 candidates completed both assessments during live selection.

Summary of results: The SJT showed a high level of internal reliability (α=.90) and 96% of items performed successfully in differentiating between candidates. The SJT showed significant positive correlations with the MMI stations (r=.50, p<.01) and referees' reports (r=.36, p<.01), providing good evidence of criterion-related validity. The majority of candidates rated the SJT as relevant, appropriate and fair.

Conclusions: This study builds upon evidence from other countries demonstrating that SJTs provide valid and effective selection instruments for postgraduate training. This study uniquely combined a SJT and MMI.

Take-home messages: Results indicate a combination of an SJT and MMI is a robust approach for nationally coordinated postgraduate selection in Australia.

3C/3
Predictive validity of selection for specialty training in public health

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A Koczwara (University College London, Centre of Applied Health Research, London, United Kingdom)
B Mason (University College London, Centre of Applied Health Research, London, United Kingdom)
C Duff (University College London, Centre of Applied Health Research, London, United Kingdom)
D Williams (University College London, Centre of Applied Health Research, London, United Kingdom)
F Patterson (University College London, Centre of Applied Health Research, London, United Kingdom)
S Gray (University College London, Centre of Applied Health Research, London, United Kingdom)

(Presenter: Nora Pashayan, University College London, Centre of Applied Health Research, 1-19 Torrington Place, London WC1E 6BT, United Kingdom, n.pashayan@ucl.ac.uk)

Background: The UK national recruitment and selection into specialty training in public health is competency-based, standardised, evidenced and informed by the person specification. It involves assessment centre comprised of two cognitive ability tests (for numerical and verbal reasoning) and situational judgement test; and selection centre using combination of assessment modalities and multiple assessors. Anecdotal reports from Training Programme Directors suggest that the new national selection process is leading to the appointment of high calibre candidates.

Summary of work: We studied the correlation between the assessment and selection centre scores. We assessed whether performance in the assessment and selection centre predict performance in training as measured by membership examination after three years of recruitment and by portfolio assessment of progress in training. We examined the incremental long-term predictive validity of each assessment.

Summary of results: Preliminary analysis showed improvement in the performance of membership examination. Higher scores in the assessment and selection centres predicted higher score in the examination. Assessment centre scores discriminated fairly between candidates who passed and failed the membership examination (area under the ROC curve of 0.73).

Conclusions: The new selection process for postgraduate specialty training in public health is effective in identifying the better performing candidates.

Take-home messages: Sound selection method ensures that, over long-term, the process has predictive validity against future performance.

3C/4
Mock interviews for Specialty selection – a pilot project to help foundation trainees in UK

Rags Subramaniam (*Queen Elizabeth the Queen Mother Hospital, East Kent Hospitals University NHS Trust, Directorate of Medical Education, Margate, United Kingdom*)
Subir Mukherjee (*Queen Elizabeth the Queen Mother Hospital, East Kent Hospitals University NHS Trust, Directorate of Medical Education, Margate, United Kingdom*)
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Background: UK medical graduates now have an online application form for foundation training (no more selection interviews) and many have faced an interview process for selection only at entry to medical school. Further progress for core or specialty training involves selection interview and some find this daunting. We started a pilot mock interview project to help trainees prepare for specialty interview.
Summary of work: Foundation year 2 trainees applying in Medicine, Paediatrics and Obstetrics and Gynaecology were offered mock interviews and eight trainees participated. Interview format was divided into three sections, clinical scenario, ethical station and portfolio station. Interview panel consisted of a Consultant from relevant specialty and medical education manager.
Feedback was provided after the thirty minute interview on both clinical and non-clinical areas.
Summary of results: Although this was voluntary, trainees found this very helpful before the actual interview, it allayed their fears and anxieties and gave them a period of reflection of their performance and practical tips to improve during the actual interview.
Conclusions: We plan to roll this out across all specialty applicants in the future which will include skill stations.
Take-home messages: Properly structured mock interviews can help foundation trainees achieve better success in their specialty interviews and should be offered to all trainees.

3C/5
Multimodal methods of student selection: 10 years to look back at its effectiveness and efficiency

Prapa Ratanachai (*Hatyai Medical Education Center, Medical Education, Songkhla, Thailand*)

(*Presenter:* Prapa Ratanachai, Hatyai Medical Education Center, Medical Education, Hatyai, Songkhla, Thailand, rprapa01@hotmail.com)

Background: In order to solve the shortage and distribution problem of doctors in Thailand, the Ministry of Public Health(MOPH) has established a Collaborative Project to Increase Production of Rural Doctors(CPIRD) for 12 years. The students spent 3 pre-clinical years in universities and 3 clinical years in 33 MOPH regional hospitals with the advantage of more authentic clinical experience with closed supervision due to the small number of students.

Summary of work: Hatyai Medical Education Center is one amongst those. We recruit students from rural Southern Thailand. Aside from the national entrance examination and aptitude test as regular students, we provide multimodal methods of test to explore whether those who submit are good enough and intend to work for their hometown. These methods consisted of the interview, MMI, learning ability skill and teamwork skill. We review the number of students for 3 year retention at hometown as promise and the expense of these selections.
Summary of results: Public work retention of overall CPIRDs is distinctly more than the regular graduates. Reasons for bleaching their promises are analyzed.
Conclusions: Multimodal tests are useful to select students as expected.
Take-home messages: From a good beginning, close nurture in the process is essential to gain a good result.

3C/6
Profiling Undergraduates' Generic Learning Skills on Entry to Medical School: An International Study

Deborah Murdoch-Eaton (*University of Leeds, Leeds Institute of Medical Education, School of Medicine, Leeds, United Kingdom*)
Dianne Manning (*University of Witwatersrand, Johannesburg, South Africa*)
Enoch Kwizera (*Walter Sisulu University, Mthatha, South Africa*)
Vanessa Burch (*University of Cape Town, Faculty of Health Sciences, Cape Town, South Africa*)
Godfrey Pell (*Leeds Institute of Medical Education, School of Medicine, Leeds, United Kingdom*)
Sue Whittle (*University of Leeds, Faculty of Biological Sciences, Leeds, United Kingdom*)

(*Presenter:* Deborah Murdoch-Eaton, University of Leeds, Leeds Institute of Medical Education, School of Medicine, Worsley Building, Leeds LS2 9NS, United Kingdom, d.g.murdoch-eaton@leeds.ac.uk)

Background: Medical education faces challenges posed by widening access to training and a demand for globally competent healthcare workers. To progress towards harmonisation of standards, an improved understanding of the potential challenges posed by variation in the educational background of entrants to medical schools will be required.
Summary of work: This study investigated the reported experience and confidence, in a range of 31 generic skills underpinning learning, of 2795 medical undergraduates entering 14 medical schools in England and South Africa, using a validated questionnaire. Responses suggest that there is considerable similarity in prior educational experience and confidence skills profiles on entry to South African and English medical schools.
Summary of results: South African entrants reported significantly more experience in 'Technical skills', 'Managing their own Learning', and 'Presentation', while English students reported increased experience in 'IT' skills. South African undergraduates reported more confidence in 'Information Handling', while English students were more confident in 'IT' skills.
Conclusions: The most noticeable difference, in 'IT' skills, is probably due to documented differences in access to computer facilities at high school level.

Take-home messages: Differences between individual schools within each country are noticeable, emphasising the need for educators to acquire a good understanding of their incoming cohorts, and ensure necessary tailored support for skills development.

3D Communications courtes (en français): Recherche en pédagogie médicale

3D/1
Le compagnonnage cognitif: étude du lien entre les croyances et les pratiques des maîtres de stage

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Marie-Claude Audétat (*Université de Montréal, Centre de Pédagogie Appliquée aux Sciences de la Santé & Département de médecine familiale et de médecine d'urgence, Montréal, Canada*)
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Contexte: La formation postgraduée connait une mutation d'un modèle traditionnel de compagnonnage simple vers des modèles plus complexes dont le compagnonnage cognitif. Sur le terrain, la réalité des pratiques est toutefois variable. Parmi les causes citées, les plus fréquentes concernent un déficit de temps et de formation. De récentes études qualitatives exploratoires suggèrent que les croyances des maîtres de stage (MS) pourraient également jouer un rôle. L'objet de cette étude est de le vérifier de manière quantitative.
Résumé des travaux: 180 généralistes MS ont participé à des ateliers visant à encourager une réflexion sur la supervision. Nous avons utilisé la méthode de classification Q pour explorer leurs croyances et une version auto-évaluative du Maastricht Clinical Teaching Questionnaire (MCTQ) pour évaluer leurs pratiques de supervision. Après approbation d'un comité d'éthique, nous leur avons demandé de nous donner accès à ces données , ce qu'environ 80% d'entre eux ont accepté.
Résumé des résultats: L'analyse sera entamée en avril après le dernier atelier. La méthodologie Q est basée sur l'analyse factorielle et vise à délimiter des familles de croyances, nous permettant ainsi de classer les superviseurs selon leur système de croyances. Les liens entre leurs croyances et leurs pratiques ainsi qu'avec d'autres variables seront évalués à l'aide d'analyses ANOVA et de régression.
Conclusions: Cette étude devrait permettre de mieux comprendre pourquoi les pratiques en matière de supervision divergent des recommandations, et ainsi d'élaborer des pistes d'amélioration de la formation des maîtres de stage.
Messages à retenir: Les croyances des maîtres de stage sont susceptibles d'influencer leurs pratiques.

3D/2
Evolution de l'implication personnelle d'étudiants en médecine dans leur apprentissage de l'éthique clinique

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Contexte: L'apprentissage de l'éthique nécessite la mise en œuvre d'une éthique contextuelle, pour développer , chez les futurs professionnels, leur sensibilité à l'autre en tant que sujet de soins, et leur capacité à engager leur propre responsabilité dans les décisions à prendre.
Résumé des travaux: L'étude, concernant des étudiants en médecine au stade clinique, met en évidence les types de situations vécues en stage qui posent un problème éthique ; la variété des questions soulevées face à ces situations ; leur degré d'implication personnelle dans leur analyse des situations.
Résumé des résultats: Les problématiques éthiques les plus souvent citées par les étudiants sont l'annonce d'un diagnostic difficile, la fin de vie, le refus de soins. Si leur degré d'implication personnelle augmente nettement entre leur première et leur troisième année cliniques, c'est à la rencontre de patients, au dialogue avec leurs maîtres de stage et à leur travail personnel d'éthique (avec tuteur) qu'ils attribuent essentiellement cette évolution.
Conclusions: L'apprentissage de l'éthique doit se faire dans la durée, associer l'application de concepts théoriques, l'utilisation d'outils pour structurer le questionnement et un tutorat individuel.
Messages à retenir: Nul ne peut être attentif à l'autre en tant que sujet soigné s'il ne peut se vivre en tant que sujet soignant. Une pratique réflexive est donc nécessaire à l'apprentissage de l'éthique clinique.

3D/3
Les situations cliniques réelles, les pairs, les experts et le climat d'apprentissage : des ingrédients incontournables pour apprendre le raisonnement clinique en formation clinique

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Contexte: Les stratégies pédagogiques visant à supporter le développement du raisonnement clinique (RC) chez les étudiants demeurent générales et souvent non évaluées. Les

théories socio-culturelles de l'apprentissage offrent des cadres théoriques pertinents pour aborder l'apprentissage du RC dont la nature complexe et le développement continu dans la pratique et en interaction avec les collègues sont maintenant reconnus. L'objectif de cette étude est d'évaluer, à la lumière de ces repères, une activité pédagogique de RC impliquant des apprenants de différents niveaux de formation

Résumé des travaux: Une étude transversale a été réalisée auprès des participants à l'activité de RC (externes, résidents juniors et seniors, professeurs cliniciens de médecine interne) à l'aide d'un web questionnaire ciblant 5 thèmes.

Résumé des résultats: 109 participants ont complété le questionnaire et tous perçoivent positivement l'activité et ce pour chacun des thèmes. Des différences significatives sont observées entre les groupes et seront discutées. Le climat d'apprentissage est globalement évalué moins positivement.

Conclusions: Cette étude supporte l'importance des pairs de différents niveaux pour l'apprentissage du raisonnement clinique en formation clinique. La mise en place d'un climat optimal demeure un défi.

Messages à retenir: Les théories socio-culturelles de l'apprentissage offrent des repères potentiellement utiles pour l'évaluation d'activités d'apprentissage du raisonnement clinique en formation clinique.

3D/4
Rôle des compétences cognitives et non cognitives dans la sélection des étudiants en médecine

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Contexte: Empathie et flexibilité sont des compétences importantes pour être un médecin efficient, professionnel et humain. Toutefois, les critères de sélection dans les Facultés de Médecine se fondent souvent sur les notes aux examens. Notre procédure de sélection a lieu à la fin de la première année et se base exclusivement sur la note au QCM. Les admissions en deuxième année sont limitées à n=160, indépendamment du nombre d'étudiants.

Résumé des travaux: Cette étude vise à explorer le lien entre compétences non-cognitives et sélection des étudiants. Les étudiants en première année (N=540) sont invités à répondre à des questionnaires validés évaluant le style d'apprentissage, l'empathie, la gestion du stress et la personnalité. Notre hypothèse est que les étudiants qui réussissent mieux au QCM ne sont pas nécessairement ceux présentant les meilleurs scores aux compétences non-cognitives, notamment relationnelles.

Résumé des résultats: Les résultats permettent de catégoriser les étudiants selon leur style d'apprentissage superficiel ou profond, leur degré d'empathie et d'ouverture. Les corrélations de ces catégories avec la note au QCM seront présentées.

Conclusions: Les conclusions de l'étude pourraient aider à mieux déterminer quelles mesures de compétences ajouter aux critères de sélection.

Messages à retenir: Combiner des mesures de compétences cognitives et non-cognitives peut optimiser la sélection des étudiants en médecine.

3D/5
L'autoconfrontation : un outil pour développer la réflexivité des professionnels de santé

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Contexte: La complexification des pratiques en santé et l'incertitude de l'action qu'elle génère transforme la posture attendue des professionnels.
Ces derniers sont enjoints à développer une pratique réflexive leur permettant de questionner les finalités et les moyens de leur action, et dans le même temps de construire des compétences adaptées aux situations complexes et singulières auxquelles ils ont à faire face.
La démarche d'autoconfrontation est sur ce point un outil pertinent favorisant la réflexivité des professionnels.

Résumé des travaux: Il s'agit, pour des professionnels, d'analyser « à chaud » une activité réalisée en contexte authentique (phase 1), d'analyser leur agir après visionnage du film retraçant leur activité (phase 2), et enfin de se confronter au point de vue de pairs observateurs (phase 3).

Résumé des résultats: L'analyse d'une expérimentation menée auprès d'étudiants en stage à l'hôpital fait état d'un décalage entre le discours produit pour rendre compte de ce qu'ils pensent avoir fait et l'analyse de ce qu'ils ont réellement fait, suite au visionnage de certaines séquences vidéo et après confrontation avec des pairs.

Conclusions: L'autoconfrontation est une démarche pertinente favorisant le développement de compétences réflexives. Cependant le protocole doit être rigoureux pour éviter certains biais liés au dispositif lui-même (espace, temporalité, influence des observateurs).

3E Short Communications: Work Based Assessment

3E/1
Workplace-based assessment tools in Canada: a comprehensive, cross-sectional survey of anaesthesiology resident coordinators

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Background: Workplace-based assessment (WBA) is defined as the evaluation of demonstrated professional practice in a real work setting by an assessor, and it is considered a cornerstone of the theory of competency-based education. WBA tools include: portfolios, case-based discussions, the mini-clinical evaluation exercise (mini-CEX) and the direct observation of procedural skills (DOPS). The survey aimed to evaluate the use of WBA tools in Canadian anesthesiology resident programs and to identify the current state of faculty development with respect to these tools.
Summary of work: Residency Program Coordinators of all 17 University Departments of Anesthesiology in Canada were included for an online survey.
Summary of results: Response rate was high with 68% (44 of 64 Resident Program Coordinators) representing 88% of the University Departments of Anesthesia. The most widely used tools were locally designed assessment tools (25/64), DOPS (28/64), multisource feedback (20/64) and case-based discussions (24/64). Both oral and written feedback is indicated in 88.6% of responses with immediate feedback occurring in 61.8%. In most cases (65.5%), the Resident Coordinator gives delayed feedback and 31.8% feedback is given directly by the daily supervisor. The large majority of assessors (88.7%) did not receive training before the use of WBA tools.
Conclusions: WBA tools are widely implemented in all Canadian postgraduate Anesthesia Programs, but the tools vary among teaching hospitals. Locally designed WBA tools are predominantly used raising the question of whether validity has been established. Faculty development appears to be underdeveloped and improvement may increase the educational benefit of WBA.
Take-home messages: Validation of WBA tools and faculty training is important.

3E/2
The utility of the mini-CEX as a summative tool in undergraduate medical students

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Background: Work place based assessment has been implemented in postgraduate medical education as formative assessment tools for many years. However the use of these assessments as a summative assessment tool in undergraduate education is limited.
Summary of work: We evaluated the utility of using the mini-CEX assessment as a summative tool in undergraduate assessment. We evaluated the time taken for each assessment encounter and investigated the acceptability and feasibility of the mini-CEX as a summative assessment tool with both faculty and students.
Summary of results: The use of the mini-CEX as a summative too is a feasible and an acceptable possibility in

undergraduate assessment. We had good agreement between assessors and the results of the mini-CEX assessments have value as a summative assessment.
Conclusions: This exploratory study has demonstrated that it is possible to deliver a summative mini-CEX assessment in an undergraduate setting. The time required to complete the assessment within an undergraduate setting should be extended to allow for their reduced level of experience.
Take-home messages: It is possible to deliver a reliable assessment of undergraduate medical students using the mini-CEX.

3E/3
Educational impact of the Mini-CEX in a cohort of fourth-year medical students

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Background: Certain aspects of the Mini-CEX utility (particularly its validity, reliability and acceptability) have been studied over the past few years but there is still relatively little knowledge about its educational impact or outcome. The purpose of this study was to measure changes in clinical skills in a cohort of fourth-year medical students assessed during their clerkship with the mini-CEX.
Summary of work: A quasi-experimental trial was designed to measure behavioral changes. The students were divided in four consecutive groups. All the groups received the same contents and teaching strategies. The difference was that groups 1 and 3 (G1) were assessed with 3 formative Mini-CEX during their clerkship period and groups 2 and 4 (G2) were not. At the end of the three weeks each group was summatively assessed with the Mini-CEX with a simulated patient.
Summary of results:
Domains G1 (n= 27); G2 (n=23) p;
Interviewing skills: 7.04, 6.87, 0.68;
Physical examination: 6.55, 6.76, 0.20;
Professionalism: 7.00, 7.08, 0.82;
Clinical judgement: 6.96, 6.72, 0.30;
Organization: 6.85, 6.87, 0.81;
Global competence: 6.81, 6.87, 0.94.
Conclusions: We could not find significant differences in clinical performance and behavior between the groups.
Take-home messages: Educational impact is a main issue. Little knowledge about educationl impact of the Mini-CEX or outcome. We need more studies to address this issue.

3E/4

Judgmental relativity in performance assessments: the influence of recent experience on Mini-CEX score choices

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Background: Our prior research into assessors' judgments in performance assessments suggested that recent exposure to other candidates' performances influences assessors' current score choices.
Summary of work: In two internet-based experiments, participants (consultant physicians) were randomised to watch and score performances by foundation doctors (PGY1) in either descending (Group A) or ascending (Group B) order of proficiency. We compared scores between conditions using ANOVA. Regression compared the relative contribution of group allocation (A or B) and assessors' hawk / dove tendency (HDT) to score variance. We also examined the influence of assessor confidence on these parameters.
Summary of results: Assessors' judgements were very susceptible to influence by recently viewed performances. Groups differed by 0.7 on a 6-point scale ($F(1,39)=12.0$, $p=0.001$, Cohen's d 0.93) depending on whether they had previously viewed good or poor performances. This accounted for a greater proportion of score variance than fixed "hawk" or "dove" tendencies (24% vs.18%, overall adj r2 0.39, p=<0.001).
Conclusions: Assessors' recent experiences of other performances influence their judgements. Theoretically this implies that judgements are relative, not absolute. Practically, this raises important issues about the fairness of assessment systems where assessors judge candidates serially.
Take-home messages: Judgemental relativity is an important new finding which has a range of theoretical and practical implications.

3E/5

Are Workplace-based assessments confident in the elective clinical trainings for final-year medical students? Influence of the difference among hospitals

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Background: Influence of the difference among hospitals on the results of workplace-based assessments is important.

Summary of work: The elective clinical trainings for final-year medical students were performed in the university hospital and external community hospitals including clinics for each 2-4 weeks. The assessment was composed of 16 items including 4 items for knowledge, 7 for skills and 5 for attitude with 4-point Likert-scale. We analyzed 710 results by Generalizability and Item Response Theories using Student, Hospital and Items as facets.
Summary of results: Student-Hospital interaction showed the largest variances of 0.305, 0.257, 0.237 in knowledge, skills and attitude domains. Variances of Student were 0.037, 0.034, 0.045. Variances of Hospital were small. G-coefficients showed low values of 0.41, 0.43, 0.55 for 6 hospitals. Students' scores were also estimated for knowledge, skills and attitude. High-class students have high scores in all the domains, however the underachievers tend to have very low scores in some of these three domains.
Conclusions: D-study revealed we needed to use 22.8, 20.2, 12.0 hospitals to keep G-coefficients of 0.7. Students should spend one year for elective clinical rotations.
Take-home messages: Even if students have average scores in communication & attitude, they might have the lowest scores in knowledge or skills.

3E/6

Workplace Based Assessments – effective and useful but do they provide an equitable training experience?

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Background: A national evaluation of the effectiveness of Workplace Based Assessment (WPAs) in dental foundation training; the trainees and trainer perspective.
Summary of work: An online survey was sent to 643 VDPs and 741 VT Trainers asking questions on the subject of the effectiveness of each of the workplace based assessment.
Summary of results: 75.43% (559) of Trainers and 55.83% (359) of VDPs responded.79.4% (286) of VDPs felt the WPAs assisted them to improve patient care and 93.3% (523) of trainers agreed with that outcome. The value of feedback and reflection in directing the learning of VDPs was also highlighted.
Comments revealed differences in experiences of VDPs and trainers in the implementation of WPAs nationally. There was a lack of formal training in the use of WPAs with 25.7% (141) of trainers having no formal training in the use of the WPAs.
Conclusions: The use of the WPAs in dental foundation training leads to improved patient care and both trainers and trainees find them useful in training. The study highlights that use of WPAs is not consistent nationally and could lead to an inequitable training experience for some trainees.
Take-home messages: Current training packages for trainers need to be reviewed and to ensure the equity of experience for all VDPs.

3F Short Communications: The Student as Teacher

3F/1
The use of peer assisted learning approach in clinical skills teaching in Erbil College of Medicine

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Background: The past 20 years has seen a changing clinical environment and working practice including the introduction of clinical skills teaching. A new approach of peer assisted learning in clinical skills teaching was introduced and evaluated in Erbil college of medicine.
Summary of work: Through DelPHE-Iraq programme of the British Council, Hawler Medical University worked in partnership with Cardiff University to assist in establishing a skills lab by providing some task-based manikins in addition to share the new methodology in teaching skills using manikins and E learning modules. Twenty four senior medical students were trained as peer-tutors in the realm of lab-based clinical procedural skills, and then became involved in teaching more junior students.
Summary of results: The experience of being tutors in clinical skills teaching was positively received by the tutors as well as tutees. The experience helped the tutors to actively learn the set of skills and made them more comfortable in practicing them. The tutees felt that they were in a more friendly and comfortable learning environment in working with senior students.
Conclusions: Using new advances in teaching can ensure training of junior doctors in a concentrated period and the experience of peer assisted learning helped to incorporate clinical skills teaching into the core curriculum.
Take-home messages: Peer assisted learning can be very valuable in clinical skills teaching.

3F/2
The role of peer feedback on learning psychomotor skills by medical students

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Background: Physical examination (PE) skills are essential to physicians' competence. Previous studies have demonstrated the positive effect of peer observation when acquiring psychomotor skills. This study investigated the influence of peer feedback when learning neurolocomotor PE for low back pain.
Summary of work: 130 second-year students were randomly assigned to the peer feedback group (n = 61) or the no peer feedback group (n = 69). Students learned and executed a neurolocomotor PE for low back pain (NLE). Students first practiced the NLE in groups of three and then they executed the NLE individually with or without feedback. This performance was videotaped for subsequent analysis using a detailed checklist with three subscales: positioning, ordered execution, and gesture precision.
Summary of results: Peer feedback has a positive effect on the acquisition of PE skills (89.5% vs. 86,2%, p<. 05); more specifically on the ordered execution sub-scales (88,3% vs. 84.2%, p<. 05). Interestingly, feedback was proved efficient in an area where students had the most to benefit.
Conclusions: These results support the use of group learning activities that allow students the opportunity to give feedback to their peers while they are learning psychomotor skills as PE.
Take-home messages: Peer feedback should be encouraged during PE learning sessions.

3F/3
How does power in the peer-relationship influence feedback delivery?

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Background: Peer-Assisted Learning (PAL) is development of knowledge through help and support amongst status-equals. The effective learning environment results from social and cognitive congruence between peer-tutor and learner. We explore how the power dynamic between peer-tutor and learner influences feedback delivery.
Summary of work: Peer-tutors were filmed teaching a PAL session. Interviews with peer-tutors used video footage of feedback delivery as a basis for discussion. Critical Discourse Analysis was used to explore the transcribed data. Transcripts were evaluated using template analysis. A theme template was created and hierarchical coding used to form a final template.
Summary of results: Peer-tutors have insight into, and feel uncomfortable about, the power they possess to demoralise or encourage learners when delivering feedback. Peer-tutors enable delivery of useful feedback by manipulating the power

dynamic to increase congruence in tutor-learner relationships. They identify strongly with their peers, making this easier to achieve. This allows for flexibility and innovation in feedback delivery.

Conclusions: Peer-tutors manipulate the power dynamic to foster a culture of mutual identification between themselves and learners when delivering feedback. This flexibility in the power dynamic allows peer-tutors to occupy multiple identities.

Take-home messages: Peer-tutors are aware of and manipulate the power dynamic in the tutor-learner relationship. This is used to aid effective feedback delivery.

3F/4
A student approach to the Doctor Patient course at NTNU, Trondheim, a two year comunication skills course with early patient contact

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Background: At NTNU we have a doctor-patient course which lasts from the beginning of the first year, through two-thirds of the second year. The course aims to teach us how to hold an efficient consultation in a patient-centered manner. Through thorough feedback from fellow students and general practitioners on our performance both in the GPs office, and on practicing on fellow students in the medical school, we strive to develop our communication skills.

Summary of work: I will present my experience with this early patient contact, both through examples of communication at different stages through the course and through a discussion of how it has affected my and my peers' approach to patients and our approach to the rest of our studies.

Take-home messages: Early patient contact increased my and my peers' motivation for basics in medicine. My and my peers' communication with patients changed from very accepting and understanding to more medicalised and direct. I feel that the course has made me more aware of the complexities in human suffering and the wholeness of human beings.

3F/5
Undergraduate medical students as teachers: perceptions of teaching their peers compared to a theoretical understanding of peer teaching

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Background: Peer teaching potentially benefits both teacher and learner. We have designed a compulsory undergraduate teaching skills week around peer and near-peer teaching tasks and evaluated perceptions of this teaching experience from the teacher's perspective according to theoretical benefits proposed by Ten Cate and Durning (2007).

Summary of work: Student-teachers completed a questionnaire at the end of a teaching-skills week. This included open and specific questions related to the participant as a teacher, leader, learner and assessor. Questionnaires were distributed to 62 students and 45 (73%) returned. Qualitative data were analysed by thematic analysis involving two independent researchers.

Summary of results: Major perceived benefits were an opportunity to practice/develop teaching skills (37/47), learning subject matter (24/47), enjoyment (7/47) and confidence development (6/47). When prompted 15/47 felt there were leadership benefits and 17/47 derived benefit from practicing feedback. Additional benefits were: reciprocal learning about the subject matter or their teaching from the tutees, better understanding of their own curriculum and the standard they were themselves required to reach, forming relationships.

Conclusions: Cognitive and social congruence within a safe environment provided by close education distance not only benefits the learner but is of value to a trainee-teacher. It facilitates reciprocal learning, understanding of their own curriculum, enjoyment and relationship building.

3F/6
Development of an undergraduate certificate in medical education

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Background: Developing teaching skills through a Peer-Assisted Learning programme has been available informally for undergraduate students at the Hull-York Medical School for five years. It is run solely by students on a voluntary basis.

Summary of work: Students undertook a root and branch review of Peer-Assisted Learning opportunities as part of a Student Selected Component - developing the framework for an Undergraduate Certificate in Medical Education (UGCME). Course components include educational theory, observed teaching sessions, reflection, facilitation skills & self-directed learning, leading to certification after satisfactory practical teaching experience and successful course completion.

Summary of results: Students developed a structured programme based around seven themes resulting in the UGCME becoming an option available to all undergraduate students within our institution.

Conclusions: Teaching experience is an important requirement of Tomorrows Doctors. Leadership, organisational and management skills can be developed alongside practice in medical education. Peer-Assisted Learning programmes exist in many medical schools but attainment of a formal qualification is rare. Students are well

placed to develop programmes for the enhancement of teaching skills.

Take-home messages: Medical Undergraduates are capable of designing innovative blended learning opportunities for their peers. Students should receive formal recognition for the development of teaching skills.

3F/7
Implementation of a short course on medical education for medical students in Tehran University of Medical Sciences

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Background: Introducing the medical students to the field of medical education would help them to be more influential in the process of curriculum change and also help the administrators to use their assistance for implementing the new initiatives such as small group sessions.

Summary of work: A 5-day course has been held for 47 students (45 medical students) in August 2011, during which by using student centered and interactive methods, different topics of medical education including teaching and learning methods, curriculum planning, course evaluation, student as teacher and some elective workshops were covered. The students were divided in teams and each team has a 30 minute session to present a topic in medical education. The course has been evaluated by using self-administered questionnaire at the end of each day, an overall course survey and a face to face session on 5th day. We are currently conducting a 9-month follow up survey of participants.

Summary of results: In a 5 point Likert scale, the students rated the course content, students' involvement in sessions, suggesting the course to other students, course organization as 4.1, 4.5, 4.4 and 4.6 respectively. The course helped the medical students to better understand the change process and its difficulties.

Conclusions: Conducting future courses for medical students would be useful in the process of curricular change.

3G Research Papers: Developing and Validating an Instrument

3G/1
Using Social Media to Enhance Continuing Medical Education (CME): A Survey of CME Course Participants

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Introduction: Social media (SM) is used by millions of physicians. According to recent surveys, over half of all students, residents and practicing doctors in the United States use some form of SM. Several studies have focused on the implications of professionalism with SM; however, there has been little research on the utility of SM for enhancing medical learning and we are unaware of any studies on the use of SM in continuing medical education (CME). Therefore, we conducted a survey of U.S. and Canadian physicians attending a Mayo Clinic Internal Medicine CME course to determine their use of SM, to evaluate their attitudes regarding the value of SM for enhancing CME education, and to explore potential associations between CME participants' characteristics and attitudes towards SM.

Methods: This was a cross-sectional survey and validation study that included all 539 U.S. and Canadian participants at a Mayo Clinic Internal Medicine CME course in 2011.We developed the Social Media Use and Perception Instrument (SMUPI), which consists of 10 items (5-point Likert scales) along with categorical response options for demographic variables. SMUPI content was based on existing literature and input from experts in scale design and CME assessment. Factor analysis was performed on the Likert-scaled survey items. Internal consistency reliability was calculated using Cronbach alpha. Associations between SMUPI item scores and participants' characteristics were determined using the Kruskal-Wallis test. The threshold for statistical significance was set at $p<0.05$.

Results: A total of 327 of 539 CME participants (response rate = 61%) completed the survey. 292 (89%) of participants reported using social media, with YouTube (190; 58%), Facebook (164; 50%), and Skype (141; 43%) being the most common. Factor analysis revealed a two-dimensional assessment of CME course participants' attitudes, with Factor 1 representing the value of SM to course participants (items 1-5), and Factor 2 representing the value of SM to CME course directors (items 6-9). One item was eliminated due to an ambiguous factor loading. Internal consistency reliability (Cronbach alpha) was excellent for Factor 1 (0.94), Factor 2 (0.89) and overall (0.95). CME course participants' favorable attitudes towards SM were associated with characteristics (mean scores; p-value) of being younger in years (20-29=3.13;

30-39=3.40; 40-49=3.39; 50-59=3.18; 60-69=2.93; >70=2.92; p=0.02), using SM frequently (never=2.49).

Discussion: The association between positive attitudes on using SM in CME, with younger age and increased frequency of SM use, suggests that CME course directors might want to direct SM learning strategies towards more youthful, technology-savvy CME physicians, and that the utilization of SM in CME will become increasingly worthwhile as junior physicians enter the profession.

Conclusions: We describe the first validated measure of Internal Medicine CME participants' attitudes regarding personal use of SM and the value of SM for learning CME. There remains a need for more research on developing effective methods for enhancing CME learning with SM.

3G/2

Evaluating postgraduate psychiatry trainees in the CanMEDs Physician-Manager role: the development of an assessment tool

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Introduction: In response to medical trainees' exposure to a complex health care system and interdisciplinary teams, trainees are being introduced to concepts of management and leadership in an effort to recognize this growing role. To date, a paucity of literature exists on Royal College of Physicians and Surgeons of Canada (RCPSC) CanMEDs Physician Manager (PM) assessment tools tailored to specific trainee groups. The aim of this study was to determine Canadian psychiatry residents' and educators' perceptions about the assessment methods for the PM role.

Methods: A total of 161 Canadian psychiatry residents were administered a 9-item questionnaire on PM assessment and the role of portfolios to assess PM competency. In the second phase of the study, Canadian psychiatry educators and program directors were recruited to participate in interviews to determine faculty perceptions on PM assessment across Canada. Survey data was analyzed using descriptive statistics and qualitative interviews were analyzed using a grounded theory approach with transcripts entered into HyperRESEARCH 3.0, a qualitative analysis software.

Results: Nearly 55% (n=89) of psychiatry residents responded to the survey. Only 43% of resident respondents reported having clear PM objectives for their clinical rotations during their psychiatry training. Nearly half (49%) of respondents agreed that the PM role should involve several methods of assessment. Residents identified an array of assessment methods for each of the specific PM domains. Logs tracking resident participation in interactive PM workshops, similar to clinical exposure logs currently being used to assess residents in psychiatry residency programs, were recommended as one assessment method. Multi-source feedback (MSF) was perceived to be the best tool to assess residents in four out of seven PM knowledge and skill domains. During Phase 2 of the study, a total of 14 educator interviews were completed as saturation of interview themes was achieved at this sample

size. Educator themes included supervisor and resident barriers to assessment, the need for new PM assessment approaches and a role for the use of portfolios provided sufficient infrastructure was available. Educators recommended that the following components be included in a PM portfolio: reflective papers, logs of PM training experiences and MSF involving interdisciplinary staff.

Discussion: Our needs assessment of Canadian psychiatry residents and educators supported a preference for a multi-modal approach to assessment of the PM role, which parallels the RCPSC CanMEDs recommendations. Educators recommended using OSCEs and portfolios, provided appropriate resources were available, to evaluate residents in the PM role. Both residents and educators had some overlap in the recommended assessment tools for specific PM domains.

Conclusions: Our results informed the development of an assessment tool designed to encompass the multiple domains of the PM role throughout residency training. Research examining the implementation of this proposed PM assessment tool is needed.

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3G/3

Validation of a Method to Measure Reflection on Continuing Education at Medical Grand Rounds

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Introduction: Studies have demonstrated that continuing medical education (CME) has only a modest effect on improving physicians' abilities to care for patients(1). Critical self-reflection is believed to be important for synthesizing medical knowledge and improving behaviors, so reflection on CME content should enhance physician and patient-related outcomes. There has been limited research regarding methods for measuring reflection on CME. Our objectives were to develop and validate an instrument for measuring reflection on CME, and determine associations between reflection scores and CME faculty presenter characteristics.

Methods/design: This was a prospective validation study of all participants and speakers at the weekly Mayo Clinic Medical Grand Rounds (MGR) from January through June of

2011. Content for the MGR reflection instrument was developed based on educational literature and input from experts in CME and scale design. The 8 Likert-scaled items reproduced Kember's four levels of reflection: habitual action, understanding, reflection and critical reflection.(2) Instrument items were structured on 5-point scales (1=Disagree, 2=Somewhat Disagree, 3=Neutral, 4=Somewhat Agree, 5=Agree). We performed factor analysis by using an adjusted correlation matrix with a generalized estimating equations approach, in order to account for correlations due to multiple ratings within speaker and talk combinations. Interrater and internal consistency reliabilities were calculated using intra-class correlation coefficient (ICC) and Cronbach alpha respectively. Associations between reflection instrument overall scores and presenter-related variables were determined using the Kruskal-Wallis and Wilcoxon rank sum tests. Statistical significance was set at $p<0.05$.

Results: 4913 participants completed 1134 reflection forms. Factor analysis revealed a two-dimensional model for measuring participant reflection on CME presentations as follows: Factor 1) High Reflection (Eigenvalue 2.51; 4 items), and Factor 2) Minimal Reflection (Eigenvalue 1.19; 2 items). Two items were excluded due to ambiguous factor loadings. This two-factor model supported Kember's theory by distinguishing between low and high levels of reflection. Item mean scores ranged from 2.97 to 4.01 on the 5-point scale. Internal consistency reliability (Cronbach alpha) was good for both the "High Reflection" (0.81) and "Minimal Reflection" (0.77) factors. Interrater reliability (ICC) for all items ranged from 0.58 to 0.88. Learner reflection scores were positively associated with the CME presenters' teaching experiences (p=0.019), use of cases (p<0.0001), and use of the audience response system (p=0.0003). There were no statistically significant associations between reflection scores and speakers' age, academic rank, public speaking training, disclosures, or total number of presentation slides.

Conclusions: CME course directors might improve learner reflection by electing speakers who are experienced educators and by encouraging the use of case-based material and audience participation.

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3G/4
A framework to facilitate self-regulated learning and its supervision in clinical practice: a qualitative study of supervisor perceptions

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Introduction: Contemporary health care education increasingly emphasises the development of self-regulated learning strategies to address lifelong learning requirements. However, facilitating self-regulated learning in the clinical environment is complex and recent workplace literature reports problems in the development and facilitation of students' self-regulated learning. The Midwifery Assessment and Feedback Instrument (MAFI) was developed as a framework to facilitate self-regulated learning. In the present study, clinical supervisors' perceptions about their use of the MAFI are studied.

Methods: Fifteen interviews were conducted with clinical supervisors. Interviews were audio taped, transcribed verbatim and analyzed in a thematic way using Atlas-Ti for qualitative data analysis.

Results: The supervisors stated that: (1) the competency structure in the feedback and assessment unit promotes the setting of realistic learning outcomes and a focus on competency development, (2) instructing students to write reflections in the feedback unit facilitates student-centred supervision and effective feedback, (3) creating a culture of continuous and shared feedback and commitment from all professionals observing students is necessary to achieve continuity in supervision and (4) an integrated learning and assessment framework facilitates competency development, because available evidence is discussed during assessment meetings. Supervisors stressed the need for direct observation, instruction how to facilitate a self-regulated learning process, and time to integrate the framework into the day-to-day work activities.

Conclusions: The Midwifery Assessment and Feedback Instrument presents a useful framework to promote self-regulated learning in clinical practice because of facilitating active involvement in learning and continuity in supervision. An enhanced effect of integrating learning and assessment might be expected by creating an assessment and feedback culture where learners and supervisors share the responsibility for the self-reflective learning process.

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3H Short Communications: Planning and Assessment in Postgraduate Education

3H/1
Challenges in re-engineering postgraduate medical education

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Background: The Royal Australasian College of Physicians (RACP) provides postgraduate specialist medical education for 5000 trainees in Australia and New Zealand. From its first external accreditation review in 2004, it became necessary to urgently develop a comprehensive training program to satisfy regulatory requirements.

Summary of work: 35 curricula were developed, along with new formative assessments, new professional development instruments, new teaching and learning processes, new supervisory structures, new on-line e-learning environments and new governance structures. Continued discussion and engagement with the Fellowship of the College was required to underpin these major changes.

Summary of results: Given the recent changes in the health service and ways and types of work undertaken by trainees, a recognition that some of the essence of the apprenticeship model of postgraduate training is lost, and needs replacement with structures and processes to replicate an apprenticeship system is critical. Although the educational re-engineering was a large task requiring considerable expertise, the most difficult task was establishing with the clinicians and trainees the necessity of structure to postgraduate medical education, increasing objectivity, mapping learning and bringing educational coherence to the years of postgraduate training.

Conclusions: Developing systems of postgraduate medical education require not only educational structure but major changes in thinking and culture to the clinicians who provide the supervision and trainees who are the recipients.

Take-home messages: Put lots of work into evidence-based reasoning with stakeholders to ensure acceptance of modern educational processes for postgraduate training.

3H/2
Do national postgraduate educational reforms provide better doctors?

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Background: Since 1998 all junior doctors in Denmark have been requested to rate the quality of their postgraduate training on a standardized questionnaire (DSQ). In 2004 a major reform of educational postgraduate medical training was launched in Denmark.
The intentions were to make specialist training more efficient by a stronger emphasis on learning goal, assessments and several other initiatives. In this study we explored whether the reform had an impact on the quality of medical training by comparing the DSQ ratings from before and six years after the reform was implemented.

Summary of work: This study is a cross-sectional register study of DSQ ratings of the postgraduate training in the region of Southern Denmark in 2002-2004 and in 2010.

Summary of results: 1.028 ratings from before the reform and 686 ratings six years after the reform were extracted. 70% of junior doctors filled in the DSQ. The doctors' perceptions of the training slightly improved concerning the educational outcome and the educational effort. However, no change was evident in several questions targeting educational management.

Conclusions: Based on the junior doctors' DSQ ratings, the quality of postgraduate training has improved slightly from 2002-2004 to 2010.

Take-home messages: An efficient implementation strategy is necessary when educational reforms are launched.

3H/3
Effects of recent regulations on postgraduate medical training in Turkey

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Background: In 2011, Turkish Government issued decree laws on health personnel's full-time working and performance-based payment system. Thus far, there have been no studies conducted to investigate their impact on the training of future medical specialists.

Summary of work: An online survey consisting of 18 questions was filled out by residents between December 2011-February 2012. Questions were grouped into three sections: 1) Demographic information and knowledge level on recent regulations; 2) Information on teaching staff, patient services and residents' workload; 3) Information on educational activities and perceptions about training.

Summary of results: While 603 residents started, 340 of them fully completed the survey. Participants were from 46 medical schools, 52 training hospitals and 40 specialties. Only 34% of participants stated they had detailed information about legislations. Number of faculty has shrunk especially in top medical schools and surgical specialties. While residents' workload increased by over 25%, their educational activities reduced by 20%. 46% of residents felt that quality of training decreased, only 21% were satisfied with their training.

Conclusions: Residents, particularly of university surgical departments, believe that their educational activities and quality of training have dropped significantly. Therefore, urgent actions to restore and improve the quality of education are needed.

Take-home messages: Turkey's recent regulations negatively affected the training of future medical specialists.

3H/4
Measuring trainee readiness to be trusted with critical tasks

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Background: This study's aim was to develop a valid authentic simulation to assess medical graduates' readiness for clinical practice.

Summary of work: During the full day assessment, candidates encountered five challenging patient scenarios and seven distracting tasks. Candidates could consult a supervisor and order diagnostic information. At the end of the day, candidates reported on differential diagnoses and management plans. Each was assessed by two clinicians, a nurse and standardized patients on different facets of competence. The clinicians rated facets of competence and also indicated how much supervision they estimated this trainee would require on nine so-called "Entrustable Professional Activities (EPAs)", unrelated to the observed scenarios.

Summary of results: Thirty candidates from the Netherlands and thirty from Germany participated. Clinicians and candidates judged favorably about the assessment's authenticity and relevance for practice. The Cronbach's alpha of the EPA scoring form was .93, suggesting a high internal consistency.

Conclusions: Further analyses and studies should add to the validity of the assessment and its usefulness for measuring readiness for clinical practice.

Take-home messages: This realistic assessment appeared labor intensive but feasible, with a solid basis for reliable scoring.

3H/5
The development and validation of clinical performance ratings of residents

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Background: The training of physicians requires trainees to develop a broad range of competencies: (1) ethics, (2) knowledge, (3) cognitive skills, (4) interpersonal skills, (5) communication and information technology skills, and (6) psychomotor skills. The traditional format of clinical performance ratings of residents did not cover all these competencies.

Summary of work: We developed a 16-item rating scale for the assessment of clinical performance of residents. The content of the rating scale was derived from the Thai qualifications framework for higher education, which mandates the demonstration of competencies in six domains among medical school graduates. Each item was rated on a four-point behavioral-anchored rating scale, where low ratings mean poor performance. We employed this rating scale at the Department of Surgery, Siriraj Hospital.

Summary of results: Ninety-nine residents were evaluated in 23 clinical services over nine months. We carried out a multi-faceted Rasch analysis of 640 ratings. All residents, raters, and items showed proper fit with the measurement model.

The rating of "below standard" was rarely used. The obtained ratings showed internal consistency reliability of 0.94.

Conclusions: A 16-item clinical performance rating form could be employed to assess six competencies of surgical trainees reliably.

Take-home messages: Psychometric study is an important validity evidence of clinical performance ratings.

3H/6
Variation among examination centers in short case examination

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Background: Variation of scores from the Royal College of Physicians Thailand (RCPT) short case examination among examination centers has been raised.

Summary of work: Data of short case examination as one part of RCPT board certifying examination in 2010 were retrieved. For each examination center, overall scores given by internal and external examiners were compared. Among patient categories selected for the examination in all examination centers, comparison between scores in each category were also explored.

Summary of results: There were 26 examination centers involved with 24 patient categories encountered. Stringent site as determined by lower scores from internal examiners were established in 11 examination centers, and vice versa 15 were lenient sites. Examination center with highest score from internal examiners had 4.8% difference of mean score from external examiners (higher), the center with lowest score from internal examiners had 4.9% difference (lower), but no statistical significance were reached ($p = 0.106$ and 0.088 respectively). There was 2 patient categories which yielded significant higher score and 1 patient category with lower score ($p = 0.004$, 0.047, and 0.036 respectively).

Conclusions: In current RCPT short case examination, selected patient category appears to contribute variation in scores more than examiner subjectivity.

Take-home messages: Short case can be revitalized.

3I Short Communications: Curriculum Development

3I/1
Early clinical exposure in medical education - Learning Opportunities in the Clinical Setting (LOCS)

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Background: Experiential learning is a fundamental curricular principle of the Graduate Entry Medicine programme at Swansea University. 'Learning Opportunities in the Clinical Setting' (LOCS) were designed to incorporate this principle from the beginning of the curriculum.

Summary of work: LOCS are short (3-4h), self-directed, and self-managed, experiential learning sessions which occur in the healthcare setting. Students choose a minimum of 20 LOCS in their first two years of medical school, complemented by longer clinical apprenticeships, community and university-based learning.

Summary of results: A portfolio of over 900 LOCS has been developed, covering the entire healthcare experience and including locations as diverse as prisons, drug and alcohol clinics, sports injury arenas and working with paramedics in the field. Students learn directly from the supervising clinicians 'on the job' with appropriate safeguards for patient and student safety.

Conclusions: Published findings reveal that feedback from students and teachers is overwhelmingly positive. Stated benefits include an early opportunity to integrate basic science concepts into clinical practice and the development of 'hands on' clinical skills from a very early stage of the programme.

Take-home messages: LOCS are a means by which student-selected experiential learning can be incorporated into undergraduate medical education from the beginning of the curriculum

3I/2
The Future of Medical Education in Canada Postgraduate (FMEC PG) Project: A collective Vision

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Kenneth Harris (*Royal College of Physicians and Surgeons of Canada, Ottawa, Canada*)
Anne-Marie MacLellan (*Collège des Médecins du Québec, Montréal, Canada*)
Ivy Oandasan (*College of Family Physicians of Canada, Toronto, Canada*)
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Background: A bold and innovative vision for educating the doctors that Canada needs has been developed by a consortium of four partners, the Association of Faculties of Medicine of Canada, Collège des Médecins du Québec, College of Family Physicians of Canada and Royal College of Physicians and Surgeons of Canada, along with relevant Canadian medical organizations.

Summary of work: This presentation will outline briefly the evidence used, including literature review, stakeholder interviews and examination of international best practices.

Summary of results: The ten recommendations as well as transformative actions will be detailed: 1) Ensure the Right Mix of Physicians to Meet Societal Needs, 2) Cultivate Social Accountability through Experience in Diverse Learning and Work Environments, 3) Integrate Competency-Based Curricula, 4) Implement Effective Assessment Systems, 5) Create Positive and Supportive Learning and Work Environments, 6) Develop, Support, and Recognize Clinical Teachers, 7) Ensure Effective Integration and Transitions along the Educational Continuum , 8) Foster Leadership Development 9) Establish Effective Collaborative Governance and 10) Align Accreditation Standards.

Conclusions: Implementation strategies will also be discussed. This collective vision will address some of the challenges facing the Canadian health care system.

3I/3
Improving academic skills in a bachelor program

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Background: In the Faculty of Health, Medicine and Life Sciences at Maastricht University, a major innovation has started within 2 bachelors programs. Each year around 550 students, start these bachelor programs. These students are expected to be able to write and think at a high academic level at the end of their bachelor. However, often the levels of these skills are not met according to expectations. In 2011, at the start of a new bachelor program, an academic track for students is implemented focusing on academic skills. This track is designed according to the principle of competency based education addressing meaningful learning, integration of sub skills, increasing complexity of assignments and objectives.

Summary of work: A description of the academic track will be presented in relation to the evaluation results of 550 students. The importance of constructive feedback in the process of becoming an academic will be shown.

Summary of results: Difficulties of providing feedback in increasing level of complexity are also addressed e.g. the complexity of organizing fair standards.

Conclusions: Finally suggestions for improvement of feedback and suggestion for change in the organization will be discussed.

Take-home messages: We expect our students to become academically skilled, but where in our curriculum do we train them to learn this? Constructive formative feedback on different assignments of increasing complexity and clear interpretation of guidelines are important, which seems logical, but which it is difficult to achieve in daily education.

3I/4
Collaborative Curriculum Change in a Climate of Individualism

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Background: Student and teacher dissatisfaction led to reconsideration of structure and pedagogy in a Department of Preventive Medicine. A comprehensive curriculum analysis between 2006 and 2010 led to reforms.
Summary of work: A case study of a three-phase curriculum (diagnostic, planning and implementation) was done. Data were obtained from student and teacher interviews and focus groups, (before and after change), discussions and questionnaires. Secondary curriculum data were analysed. Qualitative data were defined, categorized and clarified.
Summary of results: Teachers developed 12 integrated competencies spanning 5 years of the curriculum, primarily in years 1, 2, 3, and 5. Changes involved moving from disciplines-based teaching to integrated themes, fewer students per professor, more practical experience in communities, and regular formative assessment. The year 5 curriculum now includes patient contact in community health centers.
Conclusions: Change built over 4 years emerged from a curriculum analysis followed by systematic participatory development of a competency-based alternative that increased integration across 8 topics over a 5-year Course.
Take-home messages: Planning was more cohesive than implantation. A research-based culture promoted individualism that, together with inconsistent leadership and weak governance, helped to undermine the sustainability of the change.

3I/5
Just-in-time learning implemented into the medical master curriculum

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Background: Learning is effective when incorporated into a curriculum which supports its application into a range of authentic situations (Kahn et al, 2006). However designing a curriculum which provides students with sufficient medical knowledge and at the same time creating opportunities for students to apply that specific knowledge into the authentic situation, can be challenging
Summary of work: A new master curriculum was developed based on just-in-time learning principles. Just-in- time learning provides educational experiences targeted to a specific need or clinical questions. Basic communication and diagnostical skills are prerequisites for starting the clerkships.

Educationalists, medical staff and students were involved in redesigning the master curriculum.
Summary of results: Opportunities were created for students to acquire knowledge and apply it directly to clinical problems. The curriculum design now has integrated knowledge in relatively brief slots of education, focused on diverse medical problems that students encounter in their clinical clerkships.
Conclusions: Just-in-time learning incorporates learning experiences into a range of "real world" situations in which knowledge can be used immediately.
Take-home messages: A curriculum should address the needs of medical students who desire to learn when the learning can be directly applied to a practical need or question.

3I/6
Stem to Stern: Technology Enhanced Curriculum Blueprinting

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Background: Memorial University (MUN) initiated plans for renewal of its Undergraduate Medical Education Program that required a system to manage the complex relationships between learning outcomes, curriculum planning in an learning management system (LMS), and a question bank system that would generate curriculum blueprints.
Summary of work: To develop a spiral curriculum focused, technology enhanced, curriculum-blueprinting database: CanMEDS Competencies focus; Eleven national learning objective datasets; Medical Council of Canada (MCC) objectives
Faculty objectives; Linking from CanMEDS roles, to individual or sets of learning objectives, instructional learning units, content objects, and assessments. The process involves: A database to support the complex mapping. A subject matter expert team to organize and create the relationships. An technology team made up of a database programmer and education technologists. An LMS and external question bank. Overlay technology to enable easy navigation.
Summary of results: The curriculum database is well underway to manage the relationships between the learning outcomes, content and assessments.
Conclusions: Communication with stakeholders, flexibility in design, and focusing on enabling learners to manage & build knowledge are critical components in integrating technology into curriculum development & design.

Take-home messages: Curriculum management requires Inclusiveness of all stakeholders.

3I/7
Enhancing continuous quality improvement and accreditation standard review

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Background: In discussions with curriculum deans regarding replacement of AAMC's national curriculum database, it was apparent that more comprehensive resources were necessary to enhance continuous quality improvement of academic program effectiveness and accreditation efforts.
Summary of work: Five focus groups were conducted in 2010 to develop conceptual functionality for a new curriculum benchmarking tool. These discussions resulted in project expansion to include Accreditation Standards Self Evaluation Tool (ASSET), Medical Academic Performance (MAP) Dashboard, and Curriculum Reports.
Summary of results: Curriculum Reports have been released. CI, ASSET, and MAP Dashboard are scheduled for release in 2013.
Conclusions: Curriculum Reports and Curriculum Inventory will work together, with other data sources, to provide demographics-based benchmarking reports and to pre-populate sections of accreditation documentation in ASSET, greatly reducing time and effort. Schools will also be able to conduct 'mini-reviews' and monitor compliance with accreditation standards on an annual, biennial, or other cycle. The Medical Academic Performance (MAP) Dashboard will provide benchmarking for performance areas such as clinical, education, faculty, research, resources, and student recruitment and retention.
Take-home messages: MedAPS is a suite of tools to assist schools with continuous quality improvement and accreditation efforts by monitoring school data against aggregate data, highlighting potential areas of concern, and offering possible solutions from MedEdPORTAL and other sources.

3J Short Communications: Clinical Teaching 1

3J/1
What are the benefits of early patient contact for medical students? A comparison of three preclinical patient-care settings

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Background: Early clinical experiences are common in medical schools but outcomes of these experiences are not well known. We compared three types of early patient experiences at a medical school where all preclinical students complete preceptorships and weekly bedside clinical-skills training; about half also complete community-based clinical immersion experiences. We asked, what are the relative outcomes and important educational components for students?
Summary of work: Preclinical medical students completed end-of-year surveys 2009-2011. In 2009, students compared/contrasted the experiences; responses framed later survey questions. In subsequent years, students rated the three experiences in relevant areas. Investigators performed qualitative and quantitative analyses
Summary of results: Students rated bedside clinical-skills training more highly for developing comfort with clinical settings, clinical-skills training, receiving feedback, having an active experience, overall training quality, and learning team dynamics. They rated community immersion and preceptorships more highly for understanding physicians' life/practice and career and specialty decisions.
Conclusions: Preclinical students received different benefits from each experience; no single experience offered all benefits.
Take-home messages: Medical schools should define objectives of early clinical experiences and offer options accordingly. A combination may best help students achieve clinical comfort and skills, team dynamics, understanding of medical life and practice, and exposure for career and specialty decisions.

3J/2
Early medical students can assume central roles in patient care

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Background: Educators are challenged to define roles for early medical students enabling true participation in clinical practice. Elective student-run clinics (SRCs) provide students more hands-on patient care experiences than the core curriculum. We investigated what roles SRC students assume that would enhance students' early clinical experiences.

Summary of work: We conducted semi-structured interviews with a purposive sample of SRC students, asking them to discuss and compare clinic roles with those in the core curriculum. We analyzed transcripts using open coding and a communities of practice framework.

Summary of results: Twenty-two medical students were interviewed. Thematic analysis revealed the following roles: patient triage, history and physical exams, patient education, laboratory and immunization procedures, patient follow-up, staff management, and quality improvement. Rotating physicians supervise medical care, while students provide direct patient care, clinic management, and continuity. Student roles are facilitated by defined scope of activities, limited presenting illnesses, focused training, and clear protocols.

Conclusions: Through SRCs, early students show they can participate in patient care experiences to an extent not available in the core curriculum. Their role in the communities of practice is more central than that of the physicians.

Take-home messages: SRCs can inform the transformation of early clinical education in the core curriculum.

3J/3

Utilisation of the health care system for early clinical placements

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Background: Early clinical placements are popular with students, link curricula to future practice and test vocational choice, although may expose junior students to challenging situations. As medical education expands, pressure increases on the health care system to provide sufficient, meaningful clinical encounters.

Summary of work: Data on early clinical placements for the 2009 academic year were extracted from the Medical Schools Outcomes Database, a project of Medical Deans ANZ. Analysis provided a detailed description of where and when early years' medical students are in the health care system.

Summary of results: During 2009. early clinical placements occupied a total of 96, 667 days of clinical supervision and patient access in the Australian health care system. Their duration increased from Year 1 to Year 3 (1, 4 and 21 days respectively). Placements were in a wide range of settings, including hospitals and community health facilities.

Conclusions: The health care system carries a heavy load of clinical placements and early placements may occur at the expense of more traditional senior clerkship learning. Early clinical placements may achieve their objectives by using broader health and social care settings.

Take-home messages: It may be prudent to consider in resource allocation the relative importance of early and later clinical placements.

3J/4

Facilitating clinical skills competence through use of a skills 'on call' scheme

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Background: Gaining clinical skills experience can be problematic for medical students. Breadth of exposure to skills varies depending on placement, and common problems include not being in the right place when a skill is required, or that skill being done routinely by another member of the healthcare team.

Summary of work: The 'On call' scheme is a hospital based callout service I set up in 2010. It helps Year 5 students access skills in the clinical area by taking them to where skills are needed rather than waiting until they occur in the student's placement area.

Summary of results: This scheme has been operating for two years. The range of skills offered was expanded from seven in 2010 to fifteen in 2011, to better reflect an FY1's requirements. Comparison of the period July to December 2010 with that of 2011 indicates an increase in uptake for clinical skills by 34%.

Conclusions: Feedback from students indicates that they enjoy the random nature of the skills requested, and the concentrated exposure as opposed to waiting until something occurs on their placement ward.

Take-home messages: The 'on call' format has demonstrated considerable potential to help medical students transfer clinical skills into the practice area, and could be adapted to suit any clinical area with little change in the basic format.

3J/5

Making the most of the ward round: an action research study

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Background: Students are questioning the learning potential of business ward rounds; they are conducted in ephemeral teams in which clinicians need to prioritise patient care over teaching. This project aimed to help students understand what and how to learn on the complex business ward round.

Summary of work: Throughout the study 4th year student-doctors (n=11) recorded audio-diaries (n=40) following ward round interactions which were then discussed in weekly reflective learning discussions (n=3). These enabled students to explore potential learning opportunities and the challenges faced and how students communicate their learning needs to seniors. Pre- and post-intervention focus groups were used to evaluate outcomes.

Summary of results: Students understood knowledge in practice as more than core medical science. Additionally they learnt about patient management, ethics, communication, teamworking and management. Ten of the eleven students perceived they had moved from being passive to active learners. They planned their learning needs prior to ward rounds, negotiated learning opportunities and learnt through participating in routine ward round activity.

Conclusions: The benefits of this intervention relate to the students ability to participate in ward rounds and their emerging professional identity.

Take-home messages: Reflective learning discussions can help students learn in clinical practice even when there is no formal teaching.

3J/6
Evaluation of a mobile patient record system for clinical education

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Background: As part of an innovative learning system for a new masters level course in medicine, we have developed a patient record system for clinical education. In this study, we evaluated its effectiveness on mobile devices in a metropolitan teaching hospital.

Summary of work: The study took place over 15 weeks with 39 medical students on clinical placement. The patient record software was installed on three different mobile devices (iPads, netbooks and USB sticks) and students used each device for five weeks. Students were interviewed about their use and perceptions of the software and devices: their use of the software on each device was also electronically monitored.

Summary of results: The overwhelming majority of patient records were entered by students at home, not in the hospital. The numbers of records entered did not vary between devices despite clear individual preferences. While students were generally positive about the utility of the software they expressed some concerns about its use in clinical settings. These related to mobility (e.g. physical size, portability, network connectivity) and doctor-patient interactions.

Conclusions: For these students, the quality of the medical interview at the bedside appeared more important than potential efficiencies afforded by mobile devices (e.g. direct capture of patient information). Under these circumstances, students found little difference amongst devices in creating records. While mobile devices are reported to be effective for 'just-in-time' information retrieval and documentation in pre-clinical education, further research is needed to understand their role in learning complex processes in clinical settings.

Take-home messages: The role of mobile devices in clinical education needs careful consideration.

3K Short Communications: Empathy

3K/1
Learn to be a patient before being a doctor: Implementing a "Disease Lottery" for Empathy Teaching in Medical Education

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Background: The innovative idea of Disease Lottery (Barnbaum, 2001) was applied in a Life and Death course at Fu Jen University to provide another channel of empathy learning for medical students.

Summary of work: Forty-five 4th year medical students were divided into eleven groups of two or three and drew lots to "obtain" a disease in the beginning of the semester. The students were asked to search the bio-psycho-social information about the disease and imagine that they were the patient. Each group role played two 7-minute scenarios of the patient's life in the class with two themes performed separately: "My life before consulting a doctor," and "The progress of my illness. "Quantitative and qualitative evaluations were conducted.

Summary of results: The results demonstrated a significant increase in empathy scores and positive comments focused on a deeper insight toward worlds of the patients. The critiques were also related to difficulty in role-playing and some confusion about the exact learning purpose. Some interesting video footages of the process will be displayed in this presentation.

Conclusions: The cultivation of empathy can be augmented by this imaginative and experiential learning method. Further refinement of this method will also be discussed.

Take-home messages: Disease lottery creates a valuable learning opportunity for students to better empathize with patients, which is very fundamental for medical education.

3K/2
Educating for empathy

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Background: Empathy is a core element in the doctor-patient relationship and has important implications on communication, diagnosis and treatment, though only a few studies have investigated if empathy can be taught. This randomised controlled study examines if empathy of medical students can be improved by a communication skills training with simulation patients (SP).

Summary of work: 160 medical students were randomised into 2 groups. The intervention group participated in a communication skills training with SP which was aimed for advancing the motivational and behavioural level of empathy. The control group had lessons in history taking at the same time. Empathy was assessed by the Jefferson Scale of Physicians' Empathy (students' version) (JSPE) and by blinded SP and raters in an Objective structured clinical examination (OSCE).

Summary of results: The empathy ratings in the OSCE showed significant differences: the scores of the intervention group given by SP as well as by raters were higher than those of the control group. There were no differences between both groups in the JSPE. Women scored significantly higher in the OSCE and the JSPE.

Conclusions: This study shows that empathy can be taught to medical students with the help of SP. The intervention needed is feasible and can easily be integrated in the curriculum of medical students. The assessment of empathy by SP indicates that also real patients might benefit of the behavioural change of the students.

Take-home messages: 1. Empathy is important for the doctor-patient-relationship; 2. Behavioural changes in empathy can be achieved by a communication skills training with SP.

3K/3
Empathy in Medical Care

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Background: When training clinically competent doctors, most medical schools focus upon components of the interpersonal process between doctor and patient, such as empathy in the doctor-patient relationship. This study investigated the relationship between empathy and clinical competence among medical students.

Summary of work: Sixty students from an Australian Graduate School of Medicine participated in the study. Clinical competence was assessed in an Objective Structured Clinical Examination (OSCE). Empathy was rated by an independent observer of the clinical interaction in OSCE stations using the Rating Scales for the Assessment of Empathic Communication in Medical Interviews (REM). In addition, empathy was self-rated using the Jefferson Scale of Physician Empathy (student version).

Summary of results: Observed empathic behaviour, as rated objectively by an independent observer, was strongly associated with clinical competence and was evident across diverse types of consultations and a wide range of medical conditions. Observable empathy was also strongly associated with patients' ratings of the students' clinical performance. However, self rated empathy was not associated with clinical competence.

Conclusions: The results suggest that a doctor-patient relationship fostered by empathy appears to complement the skills and knowledge required to effectively care for a patient. Strategies that enhance the behavioural expression of empathy may make medical students seem more clinically competent to both examiners and to patients. However, evidence that the medical students' internal emotions are discrepant with their behaviour raises difficult questions regarding the fundamental nature of genuine empathy, with potential implications for the sustainability of the positive relationship between empathy and clinical competence.

3K/4
Can self-reported empathy by medical students predict standardized patient ratings on the patient-physician interaction?

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Background: Empathy is a multidimensional construct that is essential in effective patient-physician interactions. This paper explores whether students' self-reports of empathy predict ratings by standardized patients (SPs) on their Patient-Physician-Interaction (PPI).

Summary of work: 153 fourth-year students from the Keck School of Medicine of USC on the Clinical Performance Examination completed the Jefferson Scale of Patient Empathy-Student Version (JSPE-S). SPs assessed PPI and overall satisfaction (OS) of these students over 8 cases. Descriptive statistics, correlations and general linear modeling were performed.

Summary of results: JSPE scores predicted higher across-case mean OS scores (r = 0.18, p < .025) and PPI scores (r = 0.21, p < .025). There was no case by JSPE interaction.

Conclusions: Earlier studies showed that self-reported empathy had a low correlation with observed empathy by SPs, and that empathy scores were related to clinical competence . Another study examined student self-reports of empathy and SPs' evaluations of student empathy. This study showed that self-reported empathy could predict the PPI and OS as measured by SPs. Students with higher JSPE scores performed better on Patient-Physician Interaction and Overall Satisfaction in a SP interaction.

Take-home messages: Self-reported empathy can be used to predict PPI and OS as assessed by SPs.

3K/5
Brazilian version of the Jefferson Scale of Empathy: psychometric properties and factor analysis

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Background: Empathy is a central characteristic of medical professionalism and has recently gained attention in medical education research. The Jefferson Scale of Empathy (JSE) is the most used measure of empathy worldwide and has been translated in 39 languages to date. We aimed to test reliability and validity of the JSE for the Brazilian culture.
Summary of work: During the final fifth- and sixth-year Objective Structured Clinical Examination (October 2011), medical students answered to the Brazilian version of the JSE. Cronbach's alpha, explanatory factor analysis and item-total correlation were performed to check for reliability and validity of the scale.
Summary of results: Students' response rate was 93.7% (299 students). Cronbach's coefficient for the scale was 0.84. Principal component analysis confirmed construct validity of the scale in 3 main factors: "compassionate care" (first factor), "ability to stand in patient's shoes" (second factor) and "perspective taking" (third factor). All items were positively correlated to their corresponding factors/subscales. Correlation coefficients were all positive and ranged from 0.50 to 0.89 (p≤0.001).
Conclusions: The Brazilian version of the JSE proved to be a valid and reliable instrument for use in national and cross-cultural studies.
Take-home messages: The use of the JSE in cross-cultural studies is promising: it may foster better educational interventions and transcend boundaries in medical education.

3K/6
A pre-clinical curriculum designed to promote empathy and patient-centered care for individuals with disabilities

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Background: Over one billion people live with a disability and experience significant health care disparities compared to non-disabled peers, according to the UN World Report on Disability. Despite this, medical schools do not traditionally discuss disability issues. We developed a unique pre-clinical curriculum, designed to promote empathy and patient-centered care for individuals with disabilities.
Summary of work: Five weekly seminars are integrated into existing curricula, and feature a lecture by a medical geneticist followed by discussions with individuals that have a specific genetic condition. We also hold a panel of individuals with non-genetic disabilities and discussions about bias, disparities, and medical and social models of disability. A bioethics discussion concludes the curriculum.
Summary of results: A survey was administered before and after the disability curriculum. Results show a growth in empathy toward individuals with disabilities, and improved awareness of disability topics. 95% of students agreed that they should learn about disability in their medical curriculum.
Conclusions: Disability issues can be integrated into existing curricula, and the presented curriculum is an effective way to do so.
Take-home messages: Medical students believe that they should learn about disability. We find that it is possible to integrate these topics in existing curricula, and produce students with increased awareness of this large population.

3K/7
The impact of simulation of medical consultations on medical student empathy levels

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Background: Although the term empathy is difficult to define, its practical application is a fundamental component for a successful physician-patient relationship. Different activities have been proposed to preserve or increase empathy levels of medical students during their undergraduate course.
Summary of work: Fourth and sixth year medical students and actors participated in the simulation of medical consultations, using four clinical cases that included conflict, bad adherence to treatment, difficult disease acceptance or situations generating prejudice. After assistance, a feedback was performed, approaching the patient and physician feelings in a careful way, by positive reinforcement. Students shared personal experiences and feelings, and sometimes reported the rescue of their joy in practicing medicine. The activity had a total workload of 16 hours divided into four days.

Summary of results: The empathy levels of 121 medical students were evaluated by the Jefferson Scale of Empathy before and after the simulation activity. The average result rose from 115.2 to 124.3 after the activity (significant difference between times: p<0.001).

Conclusions: The activity of simulating consultations has a significant impact on medical student empathy levels.

Take-home messages: Activities that stimulate the development of empathy by positive reinforcement should be inserted into the medical course curriculum.

3L Short Communications: Communication Skills

3L/1
Can students use self-reflection to identify strengths and weaknesses occurring during or after communicating with patients?

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Background: Amongst the seven most important educational objectives in communication training in the German speaking countries three are referring to the ability to self-reflect (e.g. acquire the ability to identify own strengths and weaknesses). Didactic elements requiring self-reflection have been included in communication curricula, but results indicating that they induce self-reflection on communication outside classes are missing.

Summary of work: A literature review regarding students' ability to identify strengths and weaknesses through self-reflection, the assessment of usage of self-reflection, and the outcome of self-reflection on communicating with patients has been conducted.

Summary of results: Available approaches rely on verbal material (self-ratings, reflective reports) but results are difficult to compare. In related fields' results indicate that identifying strengths and weaknesses through self-reflection may work when the material is unitized and subjects compare their performance per unit against explicitly stated standards. A theoretical model linking measures of usage of self-reflection with observable outcomes is presented, along with a specification of assessment instruments that need to be developed.

Conclusions: Assessing the usage of self reflection for communication skills is challenging and needs a dedicated theory-based approach.

Take-home messages: To investigate how self-reflection can be used to identify strengths and weaknesses in communication, a theoretical model and special assessment instruments have to be developed.

3L/2
A novel integrated spiral general practice course and curriculum which focuses on the development of consultation skills

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Background: At Keele general practice (GP) is the major locus for the formative assessment, rehearsal and continuing development of consultation skills. This is delivered in: • Year 3: Consolidation of Basic Consultation Skills (CCS) – a four week year end block, 75 supervised student consultations and three formative work-place based assessments (WBA) of consultation skills. • Year 4: Higher Consultation skills (HCS) – clinical reasoning, information management and patient management taught in five one-week slices. Each HCS week consists of one classroom and three GP days with WBA of consultation skills; target of 75 supervised student consultations. • Year 5: GP assistantship (GPA) - 15 weeks, 450 supervised student consultations and a minimum of three WBA of consultation skills. • WBA summaries are fed forward to the next tutor.

Summary of work: Data taken from our integrated School evaluation.

Summary of results: 88% CCS students found feedback on consultation skills useful and 96% of HCS and (to date) 88% GPA students perceived their consultation skills had improved.

Conclusions: General practice makes a major, highly regarded contribution to learning of core consultation skills required by all clinicians thought-out their professional lives.

Take-home messages: General practice can enable enormous exposure with supervision of students to patients enabling students to develop the core consultation skills required by all clinicians.

3L/3
The Standardization of Communication Checklists as a Patient Safety Communication Tool in a Children's Emergency Department

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Background: A key vulnerability linked to communication errors during paediatric emergency is a lack of standardized communication tools with Situation, Background, Assessment, Recommendation (SBAR) interventions respectively regarding patients, the clinical setting, the issues and interventions during admission and/or transfer.

Summary of work: The aim of this study is to adopt the SBAR technique as a communication tool in the emergency department. The construction of this tool was based on a preliminary study defining the main communication failures by using the Failure Mode and Effects Analysis (FMEA).

Summary of results: In the preliminary study, we analysed almost four hundred communication events in one year. The process analysis and outlining the vulnerabilities allowed to identify 22 communication failures of the process (Communication Failure Modes). We obtained a mean Risk Priority Index (numeric measurement of risk level) of 182, the >100 values were considered to have a high impact and therefore underwent a corrective action. We developed the SBAR to standardise communication interventions, which in this study had an IPR >100.

Conclusions: Corrective actions included: reorganizing communication activities by identifying the minimum requirements collected using the SBAR instrument; reviewing the clinical reports resulting from the implementation of the communication activities.

Take-home messages: Effective communication in the emergency department ensures higher levels of patient safety.

3L/4
Sensitization session on communication skills in foundation program: effective in improving perception in newly admitted medical students

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Background: Medical Council of India, responding to an increase in patient expectations and a global concern about competences in physicians has prioritized the improvement in training of medical professionals in the areas of professionalism, doctor patient communication and ethics.

Summary of work: A 3 hour long session of didactic presentation on principles of communication, six 5-minute role playing sessions – three on doctor –patient interaction and three on teacher student interaction were conducted in the start of the session. An open floor interactive session was conducted and a final wrap up by the facilitator was conducted. A questionnaire survey was done both prior to and end of session.

Summary of results: 75.9% of the students were aware of good and acceptable social communication. 60.8% of those without previous knowledge on the topic stated that there was post session gain in knowledge. Only 10% said that the session was not useful.

Conclusions: An early exposure to concepts of communication skills improves the medical students' understanding and appreciation of the principles and importance of the same as applied to their profession.

Take-home messages: Medical colleges following traditional curriculum should introduce foundation courses on communication skills for freshmen and need to incorporate strategies of reinforcing them from time to time.

3L/5
Learning to be the patients' advocates: factors influencing the transfer of a communication skills course in a culturally hierarchical context

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Background: In a strong hierarchical culture, patients are often reluctant to voice their concerns to physicians. Nurses help to explore and negotiate patients' preference upon treatment decisions. The communication skills to perform this task, known as advocacy skills, have not been sufficiently addressed in nursing education. We investigate the impact of an advocacy-skill course and the factors influencing its transfer in real setting.

Summary of work: We applied educational principles such as 'simple to complex', 'scaffolding', and 'authenticity' in a 4-days course in Indonesia with 36 participants. To overcome strong hierarchy in interprofessional setting, approaches for negotiation was introduced. Evaluation was based on Kirkpatrick Model using questionnaires, pre/post/follow up knowledge tests, and FGDs.

Summary of results: Pre/post/follow up of knowledge tests differ significantly. Follow-up FGD showed that advocacy skills enhance professional satisfaction. Participants feel more confident to negotiate with physicians. They proposed hospital management to provide supporting facilities, such as private places to meet patients. Untrained peers are not always supportive since communication is considered time consuming and interruptive for clinical works.

Conclusions: Course is beneficial to improve knowledge. Transfer is influenced by hospital and peer supports.

Take-home messages: To enhance transfer, this course should be adopted in the continuing professional development program and embedded in supportive hospital policy.

3L/6
Teaching medical students How to Write Patient Discharge Letters - Development of an i-Phone application

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Background: The quality of hospital discharge letters is integral to patient safety at handover and in minimising medical error. However, discharge letters are frequently missing important information and may be badly written. Students receive little instruction in written medical communication.

Summary of work: The School of Medicine at UCC developed a 50-item rating scale (Cork Letter-Writing Assessment Scale:CLAS) to improve the quality and clarity of hospital discharge letters. Students were asked to write a discharge letter prior to being taught about CLAS while a similar group were taught the CLAS scale prior to writing the discharge letter.

Summary of results: Overall CLAS score was greater in students who had received CLAS letter-writing instruction. Content, structure and ''readability' were all higher in this group.

Conclusions: Use of a letter-writing checklist can improve quality of hospital discharge letters and improve patiient safety and continuity of care at handover. The CLAS checklist has been developed as an i-phone application for use by medical students and junior doctors in clinical settings. Students receive formal instruction in letter-writing skills.

Take-home messages: Use of an itemised checklist can improve quality of hospital discharge letters. Development of the CLAS scale as a smartphone application can facilitate its use at point of practice.

3M Short Communications: Different Approaches to Teaching and Learning

3M/1
Distance (inter)active methodologies, literature and medicine: UNASUS/UFCSPA experience

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Background: The UNASUS/UFCSPA Specialization in Health Family Course aims at providing health professionals (doctors, nurses and odontologists) with service re-signification and qualification in the health service daily actions in health primary attention. In order to do so, areas such as medicine, nursing, odontology, information, literature and pedagogy interact in contextualizing course study units, whose objective is to contextualize problems in the health area, reproducing stituations which are close to students' realities.

Summary of work: An innovative strategy was used in a distance mode postgraduation course: the creation of a fictional city, Santa Fé. In the Professional nucleus, patient characters are created through the constitution of narratives that focus on their health problems and social environment. Students are then able to know these patients through their reality. They can also, as a consequence, use their theoretical knowledge to find clinical solutions for each case based on their own real practice, as the situations are realistic. The use of (inter)active methodologies is an important component in the development of this pedagogical process. Thirty complex cases are used in the course.

Summary of results: The results point to the success of the experience through the identification and applicability of the constructed knowledge in everyday practice.

Conclusions: Results are partial, but students' evaluations show that this approach links theory and practice, which contributes to effective improvement in professional qualification.

Take-home messages: It's possible to innovate in health education by the interactive methodologies.

3M/2
Medical student attitudes towards post mortem examination and its utility in medical education: A brief qualitative study at one UK medical school

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Background: Attending post mortems enables students to revise anatomy and pathology within a clinical context, provides insights into results and efficacy of treatment and introduces the reality that patients die. Rates of clinical autopsies have declined and obligatory autopsy sessions have been cut from medical curricula making it difficult to assess medical student perceptions of and attitudes towards the educational value of autopsy.

Summary of work: A brief phenomenological study, comprising: nominal technique and focus group discussions undertaken with a small number of Cambridge Graduate Course students, all of whom had attended autopsies.

Summary of results: Despite varying emotional responses students regarded attending autopsy as a positive experience. An emotional continuum running from cadaver to autopsy subject and living patient emerged. Educational benefits of autopsy-based teaching included greater understanding of anatomy and physiology, as well as the role of other health care professionals and an enhanced appreciation of psycho-social aspects of medical practice. Students suggested improvements.

Conclusions: Despite varying emotional responses students regarded attending autopsy as positive and educationally beneficial.

Take-home messages: Autopsy-based teaching is valued by students but careful preparation and organisation of sessions is required to maximise potential educational benefits and reduce any negative emotional impact.

3M/3
Multimedia Learning Principles in Animation Design: A Review of Medical Animations

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Background: Medical animations are widely used to illustrate normal, pathological processes and procedures. Multimedia learning principles guide how visual and auditory elements in animations are ordered, paced, and controlled for efficient learning.

Summary of work: We compiled freely available online animations via Google searches. Five coders reviewed animations based on multimedia learning principles: pre-training (prerequisite information enhances learning); signaling (learners benefit from organizational context and structure); interactivity (learner control makes learning memorable); temporal contiguity (synchronized timing of narrations with appearance of textual/visual elements helps information integration); spatial contiguity (learning is efficient when text and images are placed closely); modality (cognitive efficiency gains with presentation of spoken words with images), coherence (free of extraneous materials), and redundancy (cognitive overload with narration and text covering replicated content).

Summary of results: Our review of 464 medical animations revealed that the majority of animations did not fully follow the recommended principles. In particular, animations tended to be video clips that offered little learner control for directly manipulating animations, with options limited to turning on/off highlight features or annotations.

Conclusions: Our review highlighted major gaps in animation design including learner control and placement/sequence of visual and auditory elements that create cognitive overload.

Take-home messages: Many unrealized opportunities exist for improving animation quality as learning tools.

3M/4
Introducing the concept of Interactive e-Posters to Scientific Conferences

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Background: Posters play an important and at times undervalued role in scientific meetings. To date, attempts to update poster presentations employing the use of new technologies have, for the most part, simply involved presenting on a screen a digital representation of the poster.

Summary of work: A new approach to poster presentations has been developed involving the innovative use of multi-touch e-boards which allow further information relating to the different sections of a poster to be accessed. This may include additional details, animated diagrams or video clips. A short two minute recorded introduction to the poster by the poster authors can also be accessed. A copy of the poster can be emailed to the viewer. Viewers can rate and comment on posters. The posters can also be viewed using an iPad or any android tablet anywhere in the conference centre within Wi-Fi access range.

A complete software solution was innovated, designed, and implemented for this purpose: it includes an online element dedicated to allow presenters to upload their e-posters, and conference committee to screen and approve the proposed e-poster applications. Another desktop application element was created to view & interact with the e-poster during the conference, and a third light version that would allow browsing for the poster and viewing them over mobile tablet devices within wireless transmission range.

Summary of results: Using the solution innovated for this purpose; Posters accepted for presentation at the Saudi International Medical Education Conference (SIMEC 2012) in Riyadh were made available on the multi-touch e-boards for browsing by conference participants or as a focus for presentation by the authors to small groups. The approach was successfully implemented and found to present a new dimension to poster presentations at the meeting.

Take-home messages: A move from traditional paper-based posters to the use of multi-touch e-boards offers significant advantages and moves poster presentations to a new higher level.

Acknowledgement: Special thanks to SIMEC 2012, SSME
AMEE NOTE: You can see the interactive poster technology for yourself at AMEE 2012. All 'CC' poster sessions will be presented electronically.

3M/5
Case Based Integrated Teaching for Undergraduate Medical Students

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Background: The traditional method of teacher-centred training is one in which knowledge and intellectual skills are imparted to students in a passive manner through lectures and demonstrations. Departments follow rigid compartmentalisation.

Summary of work: The aim of study was to see the utility of Case Based Integrated Teaching (CBIT). We used modified Barrow's Model of learning. Real clinical cases served as triggers for self-directed learning. 72 students-study and control groups (36 in each group). The study group - 4 groups of nine students each. The method was evaluated by individual process assessment, cognitive domain assessment and faculty-student feedback.

Summary of results: Students from study group scored better in short answer questions. Concept Maps prepared by students were analysed and the score was high in the study group. All the participants appreciated the CBIT Model and mentioned that it has enhanced their clinical reasoning skills and that the exercise was self motivating. Students also had an apprehension that it may not help for their traditional examinations. Faculty mentioned that such a model should be implemented in all disciplines.

Conclusions: Case Based Integrated Teaching is an effective modality of imparting medical education with effective integration of various disciplines. It can be implemented in a phased manner and used for formative evaluation of undergraduate medical students.

Take-home messages: A student centred, patient oriented approach as a result of integrated teaching helps us to have a much needed " Basic Doctor ".

3M/6
The struggle to understand: Medical students' potential pathways towards understanding

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Background: The task medical students are facing, to learn a substantial amount of details and integrate these into a coherent whole in a limited time frame, is demanding. The aim of the present study was to explore students 'journey' towards understanding during a pathology course in an undergraduate medical programme.

Summary of work: Seven students were interviewed in group, and seventeen students reflected in writing. Data was gathered from both groups at five separate times during the course, and analysed with a thematic analysis approach.

Summary of results: Our findings suggest that students seek different forms of understandings as they get to grips with their studies. The forms of understanding found were:

understanding as 'knowing the language', 'knowing the map', 'knowing the catalogue' and as 'experiencing an integrated whole'. Early in the course the students appeared to focus on the first two forms, and later in the course, as they learned more details, they focused on the 'catalogue' or the 'integrated whole'.

Conclusions: Our findings suggest potential pathways students might take towards a deep understanding. The teaching design clearly influenced learning.

Take-home messages: How courses and teaching activities are designed is important to students learning and their pathways towards understanding.

3M/7
Olfactory Stimuli in the Augmentation of Learning and Recall in an Educational Environment

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Background: The link between environmental cues and learning has been clearly defined in numerous studies. However, study of environmental cues, particularly that of olfactory stimuli, and their effect within an education environment are lacking.

Summary of Work: In this study, we investigated the link between different olfactory stimuli, learning and examination performance. 60 students were separated into three groups of mixed ability. An identical didactic lecture was presented to all groups. During the lecture, two of the rooms were scented with different perfumes and one remained unscented. During a subsequent exam, the three groups were separated into three examination halls and the same scents were provided for each group as those present within the learning phase.

Summary of results: Statistically significant differences were found between group with absence and presence of the olfactory stimuli. It was found that the scent augmented the learning process, represented by exam performance. The group where no scent was present performed poorly compared to those exposed to the olfactory stimuli.

Conclusion: Although, these scents may have an ability to cause relaxation, it is also possible that this study may show that environmental cues, specifically olfactory, may be able to augment learning and recall when presented together. This may indicate that learning is coded along with environmental cues in which the learning process occurs and such environmental cues when presented again can also augment the recall process.

3N Workshop: Exploring Student Engagement: Strategies for Promoting and Evaluating Programs

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Background: A key factor contributing to student achievement and satisfaction with education is engagement. There is research about student engagement in primary and secondary education; the subject is increasingly being discussed relating to medical education. This workshop will examine student engagement in medical education and what engagement beyond the required curriculum means to students. Information will be given about how institutions have promoted and met the challenges of providing student experiences. Participants will identify steps needed to enhance programs, build new programs, and resolve issues at their institutions.

Intended outcomes: Participants will identify best practices in promoting student engagement, meeting challenges, and ways to measure effectiveness. They will identify a program goal/challenge related to student engagement at their institutions, and begin to identify steps to enhance and build programs, and resolve issues.

Structure: This highly interactive workshop will consist of small group activities with large group debriefing. Brief descriptions of the Astin (1984) IEO Theory (Input, Environment, Outcome), and the application of this model in several medical schools in Europe and the USA, will guide discussion about student engagement.

Who should attend: Medical educators/students interested in enhancing student engagement in recruitment/admissions, teaching/curriculum, and civic activities/leadership.

Level of workshop: Beginner.

3O Workshop: What workplace-based performance assessments tell us about doctors who are performing poorly

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Background: NCAS has over 10 years' experience working in the field of the assessment and remediation of doctors suspected as having performance difficulties.

Intended outcomes: Participants will: (1) Understand how different sources of information contribute to the assessment process and outcome; (2) Consider how to define and operationalise the described standards; (3) Consider how the outcome of assessment compares to the information presented at referral; (4) Consider how the outcome of assessment contributes to educational plans including plans for remediation of practitioners with performance problems using specific case examples.

Structure: Brief presentation of literature and definitions of standards of performance by example and domain of practice using the terms: - satisfactory, poor and inconsistent; Presentation of NCAS findings from the assessment of 50 practitioners who were assessed in last year corroborating information from case background, clinical assessment (observation of practice, record review, case based assessment), contextual assessment (clinical environment, team relationships, policies in place, access to education), multisource feedback, health and psychological assessment including self assessment; Individual case studies; Implications of these findings; Reflections on the validity, challenges and utility of the definitions of standards for practitioners with performance problems and more broadly.

Who should attend: Those involved with design of assessment programmes for doctors at any postgraduate level those with interest in revalidation.

Level of workshop: Intermediate.

3P Workshop: Social Media in Medical Education: A Student's Perspective

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Background: Use of social media has grown exponentially over the last 10 years. With over 90% of medical students reported to be using social media it is impossible to ignore the need to find ways of integrating use of social media into the medical curriculum. Social networks are a phenomenon arising from our current generation of students and therefore we believe that students are best placed to lead a workshop intended to explore uses of social media in medical education.

Intended outcomes: Our aims are to provide attendees with a student's perspective on the most effective use of social media and how it can enhance medical education, to provide training on how to use social media and how to avoid some of the pitfalls from which issues of professionalism can arise and to discuss ways of implementing social media in the curriculum.

Structure: Attendees will engage in an interactive workshop in which students will introduce use of social media and demonstrate use of social media tools. This will lead into discussion on how these tools can then be used to benefit medical education for students, teachers and institutions.

Who should attend: Any attendee with interest in how social media can be used for the benefit of medical education.

Level of workshop: Intermediate.

3Q Workshop: ASPIRE: A new global program to recognise excellence in medical education

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Background: Most medical schools in the developed world are under regular accreditation by national and/or regional accreditation bodies. The need has been expressed for another form of quality assurance and enhancement, recognising excellence, that rightly falls outside the formal accreditation process, and is the remit of professional education bodies. There is currently no mechanism at a global level for a professional peer review of excellence in medical education.
Intended outcomes: Raise awareness about this new global recognition program Brief medical schools interested in submitting an application for ASPIRE recognition Expand and improve an understanding about what excellence in medical education entails
Structure: ASPIRE background and development What is 'excellence' in medical education, and how is ASPIRE different from accreditation? Details about the 3 initial areas selected for consideration:• Assessment • Student engagement • Social accountability and responsibility Facilitated group discussion ASPIRE process and timelines.
Who should attend: Representative of any medical school seeking to be among the first to achieve recognition for excellence in medical education.
Level of workshop: Beginner.

3R Workshop: Careers advice and guidance - a 4 step model

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Background: In the UK, an increased number of medical students has led to greater competition for 2 year foundation (intern) training programmes. In addition, trainees need to apply for specialty training (residency) 16 months after qualification. Guiding students and trainee doctors to make career choices requires skill and training. This workshop is designed to provide a structured approach to careers guidance for students, trainees and trainers.
Intended outcomes: By the end of the workshop participants will 1) understand the four step process students/trainees need to work through in order to manage their careers 2) be able to use a structured approach to a careers interview; 3)

reflect on improvements for giving of career support in their own work place.
Structure: A highly interactive workshop which will comprise of an introductory presentation and small group exercises where participants will have an opportunity to use the 4 step model and structured approach to careers interviews by working through case scenarios. This will be followed by a plenary discussion and conclude with a reflection exercise.
Who should attend: Anyone who is involved in undergraduate or postgraduate training.
Level of workshop: Beginner.

3S Workshop: How Do We Move Past "Participant Satisfaction" When Evaluating Faculty Development Activities?

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Background: Evaluating the effectiveness of faculty development activities is important not only to assess current programs but also to provide a creditable basis for establishing new programs for medical faculty members. Research has shown that participant satisfaction concerning instruction does not correlate with change in behavior after instruction.
Intended outcomes: This international workshop, combined with data collected on this topic at the AAMC meeting, could help to develop a process for practically evaluating the effectiveness of faculty development activities beyond the level of participant satisfaction.
Structure: Using Kirkpatrick's Model workshop participants will be asked to work in large and small group answering the following questions: 1. What are the factors which impact the evaluation of faculty development activities? 2. Moving past participant satisfaction... a. how can we best evaluate the learning outcomes of participants as a result of faculty development activities? b. how can we best evaluate the performance/behavioral change of participants as a result of faculty development activities? c. how can we best evaluate the results (effects on the environment) of faculty development activities? 3. When should faculty development activities be evaluated concerning No. 2 above? 4. Should the length of the faculty development activity (e.g. workshop or year-long medical education fellowship/scholarship program) impact when and how the faculty development activity is evaluated? A copy of the notes and findings from the session will be sent to each of the workshop participants.
Who should attend: Anyone involved in faculty/professional development and interested in the quality and effectiveness of these activities.
Level of workshop: Intermediate.

3T Workshop: The research interview: A primer for conducting and analysing interviews as part of an overarching qualitative methodology

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Background: Developing expertise in conducting research interviews is difficult for educators and researchers to learn in isolation. Further, using this research tool in interdisciplinary contexts raises many conceptual and practical issues related to rigour, including how to decide what type of interview to use, what types of questions ask, deciding who should conduct the interviews, knowing when and how far one can deviate from the interview script and deciding what analytical approach should be used to make sense of the data collected using interviews.
Intended outcomes: Participants will be introduced to the research interview as a method that can be used in a variety of social science based methodologies. They will have an opportunity to learn about how to structure interviews, how to develop an interview script and will be introduced to a number of different analytical approaches that can be used to make sense of data collected using interviews.
Structure: This workshop will involve a combination of didactic presentation, simulation, small group exercises and large group discussion. Examples from the presenters' research programs will be used to introduce concepts. Participants will have the opportunity to practice interviewing through a simulated exercise and work on actual transcripts to practice common approaches for analyzing data.
Who should attend: This introductory, interactive workshop is geared towards individuals who have a basic familiarity, but little experience, with interviewing and qualitative research.
Level of workshop: Beginner.

3U Workshop: Transforming Daily Activities into Scholarship and Research

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Background: Every educator develops unique, creative approaches to educational challenges that can benefit others. These should be evaluated and shared within and beyond our community, which is what scholarship is all about. Our workshop will present the expanded vision of scholarship as described by E.L.Boyer and Charles Glassick of the Carnegie Foundation. This expanded vision suggests exciting new ways that we can build scholarship into our everyday activities. Guided by experienced leaders, participants will learn and practice how to craft their own ideas into scholarly presentations and publications.
Intended outcomes: By the end of this workshop, participants will be able to: 1. Explain scholarship as described by Boyer and Glassick 2. Use Boyer and Glassick principles to create an outline for a scholarly project which they can complete at their home institutions.
Structure: 5 min Introduction 15 min Presentation: Theoretical Background Scholarship of discovery, integration, application and teaching 50 min: Small Group Activity: Turning your Innovation or a Question into Scholarship. Participants develop their ideas with guidance and feedback 20 min: Discussion 1. Challenges 2. Additional Questions.
Who should attend: Educators interested in sharing their work through presentation and publication.
Level of workshop: Beginner.

3V Meet the Experts: Assessment, Measurement & Mobile Technology

Godfrey Pell (*Leeds Institute of Medical Education, University of Leeds, United Kingdom*)
Richard Fuller (*Leeds Institute of Medical Education, University of Leeds, United Kingdom*)
Matthew Homer (*Leeds Institute of Medical Education, University of Leeds, United Kingdom*)
Gareth Frith (*Leeds Institute of Medical Education, University of Leeds, United Kingdom*)

Godfrey Pell, Richard Fuller and Matthew Homer work within the Assessment Research Group at Leeds Institute of Medical Education at the University of Leeds (UK). Our philosophy is born of a continuous, quality improvement process that has seen ongoing improvements within assessment in our undergraduate Medicine degree programme and informed a programme of research in key areas of Assessment & Measurement. Our main areas of expertise relate to the OSCE (including quality improvement), the theory, design and delivery of successful sequential testing, the use of item response theory in relation to written testing, and workplace assessment, including application of assessment for learning theory.

Gareth Frith is the Technology Enhanced Learning Manager for the Leeds Institute of Medical Education. The Learning Technology team's areas of expertise relate to the support of students in clinical practice through an innovative programme which helps them to develop their learning skills from clinical experience alongside a programme of workplace assessment delivered by smartphones.

Come and see us to discuss your assessment and mobile technology related issues. No appointment necessary!

3W Posters: Simulation

3W/1
The development of the piloting strategy based on ICT patient simulation in healthcare training centres under the SIMBASE European Project

Teresa Campos Garcia (*Andalusian Regional Ministry of Health, Seville, Spain*)
Almudena De la Serna (*Andalusian Regional Ministry of Health, Seville, Spain*)
Miguel Castelo Branco (*Universidade da Beira Interior, Faculdade de Ciências da Saúde, Covilhã, Portugal*)
David Riley (*Fundacion Iavante, Malaga, Spain*)
Neil Warren (*Postgraduate Deanery, Wales, United Kingdom*)
Ildiko Szogedi (*National Institute for Quality and Organizational Development in Healthcare & Medicines, Hungary*)
(*Presenter:* Almudena De la Serna, Andalusian Regional Ministry of Health, Avda. De la innovación s/n. Edificio Arena 1, Seville, Spain, almudena.serna.bazan.ext@juntadeandalucia.es*)

Background: The SIMBASE project defines a strategy to adopt in patient simulation based on a pilot guide that identifies the skills and competences which need to be developed and the appropriate technological tools to deliver the said outcomes.
Summary of work: Four pilots have been organised, one in Spain, Portugal, Hungary and Wales. The working method has been to define a questionnaire to help partners develop their driving, leading to a strategy using the impact model assessment identify the skills and competencies to be developed and appropriate technological tools to get the results in each one of the 4 piloting countries. The goals are: - Define patient-simulation training strategies; - Implement priority actions from the strategies; - Assess impact of actions on healthcare systems and their training component; - Determine the validity of the model developed; - Suggest improvements to the model to aid its further development; - Analyse and assess its application and performance in the real life scenarios experienced during the pilots; - Determine its suitability as a policy implementation tool.
Summary of results: Report analyzing the piloting experience and compare with control cases to fully explore the impact, success ad suitability of the training strategies and the impact of the test actions.
Conclusions: The pilot will analyze the effectiveness of impact assessment model to analyze training strategies through simulation.
Take-home messages: The success of the pilots using the model and the continuous professional development for nurses, doctors and medical technicians, training of medical students, continuing education for nurses and undergraduate and graduate training of medical specialists to assess the outcome of impact assessment model previously defined.

3W/2
"Patient safety simulation" debriefing and feedback from undergraduate medical students

Pedro Lito (*FCS-UBI, LaC, Covilhã, Portugal*)
Ricardo Tjeng (*FCS-UBI, LaC, Covilhã, Portugal*)
Edmundo Dias (*FCS-UBI, LaC, Covilhã, Portugal*)

Luis Patrão (*FCS-UBI, LaC, Covilhã, Portugal*)

(*Presenter:* Pedro Roque Martins Lito, FCS-UBI, LaC, Avenida Infante D. Henrique, Covilhã 6200 - 506, Portugal, pedrolito@fcsaude.ubi.pt)

Background: Patient safety can be defined as an attribute of health care systems that minimizes the incidence and impact of adverse events and maximizes recovery from such events. It´s part of LaC-Clinical Skills Lab´s program.
Summary of work: Patient safety clinical simulation was run for 6th year medical students with the objective to interact with patient and relatives, suggest a diagnosis, propose a treatment, explain the risk, get an informed consent and transmit important clinical information to other medical team. Thereafter, debriefing, and a feedback questionnaire was provided, regarding strengths and weaknesses.
Summary of results: Most students agree that simulation is important to consolidate and break barriers between theory and practice. In that sense, valued reality of space, fidelity of simulators and materials used and highlighted the importance of debriefing. Earlier contact with simulators, and better explanation of the scenario was desirable.
Conclusions: Simulation is well accepted by medical students, they wanted more and earlier contact with simulation during the medical course. Agreeing that it contributes to better link between theory and practice. As improving points suggest; more precocious contact with simulators and reinforce the idea that it is necessary create and explain in detail the scenarios to ensure reality and minimise errors.
Take-home messages: Simulation culminates gaps in theoretical and practical knowledge and encourages creativity and critical thinking. Feedback is constructively for creation of new and better scenarios.

3W/3
Simulation of an emergency caesarean section - Practising this rare procedure improves patient safety

Merja Lahtela (*Lapland Central Hospital, Department of Anaesthesiology, Rovaniemi, Finland*)
Paula Poikela (*Rovaniemi University of Applied Sciences, Rovaniemi, Finland*)

(*Presenter:* Merja Lahtela, Lapland Central Hospital, Department of Anaesthesiology, PL 8041, Rovaniemi 90101, Finland, merja.lahtela@lshp.fi)

Background: Annually, 10 - 12 babies are delivered in the Central Hospital of Lapland by emergency caesarean section. Succesful and safe performance of this rare procedure requires working quickly and communicating effectively across employee groups in accordance with guidelines. In preparing for delivery-related emergencies, teamwork training is recommended together with clinical skills training
Summary of work: The goals of the work were to train the performance of emergency caesarean sections through simulation and provide experience of in situ simulation performed at our hospital. We conducted five in situ simulations that span the entire chain of events from the first meeting of the parturient and the midwife to resuscitation of the newborn after surgery.
Summary of results: The participants commented that it was important to receive training for high-risk, infrequent events.

They also noted that the training made them realize the importance of teamwork and communication skills. The in situ simulation identified latent hazards in our clinical systems. It also revealed knowledge gaps related to clinical skills and protocols.

Conclusions: Simulation-based interprofessional training in a realistic environment is a valuable means of teaching high-risk, infrequent events in central hospitals. Such training highlights system errors and improves patient safety.

3W/4
Show them! A randomized, controlled bronchoscopy simulation study

Anne Sofie Bjerrum (*Aarhus University Hospital, Department of Chest Diseases, Aarhus, Denmark*)
Tamara van Gog (*Erasmus University Rotterdam, Institute of Psychology, Rotterdam, The Netherlands*)
Berit Eika (*Centre for Medical Education, Aarhus University, Aarhus, Denmark*)
Peder Charles (*Centre for Medical Education, Aarhus University, Aarhus, Denmark*)
O Hilberg (*Aarhus University Hospital, Department of Chest Diseases, Aarhus, Denmark*)

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Background: When novices learn they can easily become cognitively overloaded by the informational processing, which result in reduced learning. By applying certain design principles cognitive overloading can be prevented. One of these design principles is worked examples/modelling examples. In medical simulation several attempts have been made to replace instructor-feedback with various types of instructional videos. None of these studies have shown training without an instructor superior to training with an instructor. Instead of finding new methods for self-training, we explore an instructor-dependent training-set-up, investigating the effects of incorporating modelling examples in the curriculum of bronchoscopy simulation training.

Summary of work: 48 medical students were randomized to bronchoscopy simulation training with or without 3 additional bronchoscopy-simulation-demonstrations performed by an instructor. Both groups received feedback from the instructor.
Participants were tested with pre-, post- and retention-tests.

Summary of results: Data collection will be finished by April 2012. By August 2012, the final results will be ready to be presented at the AMEE Conference.

Conclusions: Instructor-dependent simulation-training is costly. Perhaps we can make better use of the instructor. Incorporating modelling examples in the curriculum of medical simulation-training could further enhance learning.

Take-home messages: Let the instructor demonstrate.

3W/5
Exploring the process of the moulage used by the London Helicopter Emergency Medical Service (London HEMS) – to inform a facilitator development process

Usman Tariq (*Barts and the London School of Medicine and Dentistry, Center for Medical Education, London, United Kingdom*)
Meera Sood (*Barts and the London School of Medicine and Dentistry, Center for Medical Education, London, United Kingdom*)
Danë Goodsman (*Barts and the London School of Medicine and Dentistry, Center for Medical Education, London, United Kingdom*)

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Background: This project focussed on the facilitator role, in the 'low-tech, hi-fidelity', simulated patient training 'moulages', utilised by the London Air Ambulance for their team training. Running such moulages poses unique challenges; because of the high-level skills requirements, both clinically and practically, the centrality of the multiprofessional roles training, and managing the emotional fidelity of the experience for the learners. The key aim of the work has been to develop a more formal facilitator training programme.

Summary of work: A literature review was undertaken in order to understand the recommended practices for facilitating simulated learning. Following this, in-depth observational field work was done in order to formulate a more precise knowledge of these moulages. Finally, semi-structured interviews were conducted with all team members in order to gauge their perceptions of the role.

Summary of results: The literature review informed key skills required of facilitators, mostly in terms of feedback methods and scenario development. The observational work and interviews have revealed that the complex and demanding nature of the facilitator's roles necessitate a tailor-made development process.

Take-home messages: Using a broad-based methodological approach has enabled the creation of pointers for facilitator development for this extremely specialised team.

3W/6
How to simulate joint dislocation in cadavers for teaching psychomotor skills to 4th- and 6th-year orthopedic medical students

Weerachai Kosuwon (*Faculty of Medicine, Khon Kaen University, Orthopedics, Khon Kaen, Thailand*)

(*Presenter:* Weerachai Kosuwon, Faculty of Medicne, Khon Kaen University, Orthopedics, Department of Orthopedics, Faculty of Medicine, Khon Kaen University, Khon Kaen 20001, Thailand, weera_ko@kku.ac.th)

Background: Differences in anatomy, muscle tone, capsular and collateral ligaments make creating models that simulate joint dislocation challenging: we developed a minimally invasive technique on cadavers.This study aims to evaluate psychomotor skills development among 4th and 6th year orthopedic medical students to diagnose and perform closed reductions of common joint dislocations.

Summary of work: Fresh cadavers (40-60 years of age) with negative blood results for bacterial culture, hepatitis virus

antigen and antibody, and normal skin condition were selected. Anterior shoulder, posterior elbow and posterior hip joint dislocations were simulated by making small incisions and cutting the joint capsule. Students were given a 1-hour lecture plus demonstration on diagnosis and reduction the day before hands-on training. Students' descriptions and closed reductions were evaluated by direct supervision; learning process by self-scoring (scale: 1-5).

Summary of results: 2,050 medical students were trained using 102 cadavers March, 2005—February, 2010. All students correctly described the deformities and performed successful reduction in 1-2 attempts (1,947; 96%). Learning process rating averaged 4.36±0.98. Later, 1,245 graduates reported successfully performing closed reduction on live patients.

Conclusions: First report of a minimally invasive technique using cadavers for demonstrating deformities and teaching closed reductions of common joint dislocations for orthopedic medical student.

3W/7
Use of a pelvic examination simulator as part of clinical skills education amongst pediatric residents

Natasha I Johnson (*McMaster Children's Hospital, Pediatrics, Hamilton, Ontario, Canada*)
Erica Corsi (*McMaster Children's Hospital, Pediatrics, Hamilton, Ontario, Canada*)

(*Presenter:* Natasha I Johnson, McMaster Children's Hospital, Pediatrics, Hamilton, Ontario, Canada, natjohn@mcmaster.ca)

Background: Given changing guidelines regarding PAP and STI screening, opportunities for pelvic examination may become more rare in pediatric residency training programs. Despite this, pelvic examination remains an important skill for pediatricians, whose adolescent patients make up a high-risk group for pelvic pathology.

Summary of work: Pediatric residents were surveyed about their comfort level with performing pelvic examinations after participation in a clinical skills station using a pelvic simulator (post-test survey). An adolescent medicine specialist supervised the activity.

Summary of results: 27 residents (64%) participated in this survey. Of these, 20 participated in the clinical skills day. Only 35% felt competent with pelvic examination skills. 57% of residents felt more comfortable after training with the simulator and 89% of residents considered the simulator to be a valuable learning opportunity.

Conclusions: Overall pediatrics residents do not feel comfortable with pelvic examinations and may have few opportunities to practice this skill during residency. Use of a pelvic simulator may be a useful adjunct to improve on these skills. Further studies with resident competence evaluated through objective measures such as OSCE stations or performance reviews are warranted.

Take-home messages: While no substitute for actual clinical experience, use of pelvic examination simulators may serve as a valuable adjunctive education tool for pediatric residency programs.

3W/8
The use of an equine dental simulator for assessing student performance in a dental examination skills

station: how performance results can inform curricular change

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Andrea Vallevand (*University of Calgary Faculty of Veterinary Medicine, Curriculum Office, Calgary, Canada*)
Ashley Whitehead (*University of Calgary Faculty of Veterinary Medicine, Clinical and Diagnostic Sciences, Calgary, Canada*)
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(*Presenter:* Darlene Donszelmann, University of Calgary Faculty of Veterinary Medicine, Clinical and Diagnostic Sciences, Clinical Skills Building, 11877- 85 Street NW, Calgary T3R 1J3, Canada, djdonsze@ucalgary.ca)

Background: Assessing equine dentistry skills provides unique challenges including identifying performance-based outcomes and developing a functional testing environment.

Summary of work: A live animal and cadaver head model combination was used to assess the dental examination skills of veterinary students. The lower than anticipated scores compelled a faculty review of the equine dentistry curriculum. Knowledge and skill competencies were listed and a survey created. Expert equine dental practitioners were solicited to score each competency using three separate rating scales. These results supported proposed faculty changes to the curriculum. The same dental exam station and live animal/cadaver model setup was used to assess the next year's class of students taught with the new competency-based curriculum.

Summary of results: The mean checklist score for the first year of students was 47% (SD = 19%). The mean checklist score for the subsequent class was 73% (SD = 14%). An item analysis demonstrated improved performance on 12 of 13 checklist items.

Conclusions: The faculty believed the horse/cadaver simulator setup provided an effective and functional testing environment and that performance was influenced by inadequacies in the curriculum, which prompted the competency-based changes.

Take-home messages: Needs analysis supported by expert ratings should be considered critical for providing curricular direction for teaching/assessment in veterinary medical areas of expertise.

3W/9
Development of a low-cost basic life support manikin with prompt and feedback device for developing countries

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Djayanti Sari (*Faculty of Medicine, Universitas Gadjah Mada, Department of Anesthesiology and Reanimation, Yogyakarta, Indonesia*)
Rony Wijaya (*Faculty of Medicine, Universitas Gadjah Mada, Production House, Yogyakarta, Indonesia*)

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Background: A basic life support manikin with electronic prompt and feedback device is usually high cost and therefore unsuitable for medical schools with low budget in developing countries. However the need for a manikin with prompt and feedback device is inevitable to improve skills performance. The more realistic and contextual manikin will enhance skills acquisition and retention. The aim is to develop a relatively low cost, contextual, and realistic prototype manikin equipped with representative electronic prompt and feedback device.

Summary of work: A full body basic life support manikin is currently being developed at the production house of FM UGM. The manikin is equipped with electronic prompt and feedback device, and also dressed up in various type of costumes. The body appearance will be matched to local's (Indonesian) skin and hair color. A study to evaluate the manikin is currently in progress.

Summary of results: Preliminary result shows that the skills trainers view the new manikin may help trainees to learn and practice the basic life support skills as compared to the existing manikin. Further study is still in progress.

Conclusions: A low-cost, contextual, and realistic basic life support manikin could be an alternative for medical school in developing countries. It could provide better learning experience and context for the trainees to enhance skills acquisition and retention.

3W/10
The « Double Clock » : A Simple Microsurgical Training Device to Reduce Animal Use

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Véronique Martinot-Duquennoy (CHRU Lille, Chirurgie Plastique, Lille, France)

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Background: Microsurgery techniques have to be learned in specific programs. They should always start in the laboratory. Animal experimentation is the most common way to learn microsurgery. However, this practice should be performed according to ethical rules.

Summary of work: Our 3 aims were: improving students' skills in microsurgery, respecting ethics and reducing costs by using fewer animals. We propose an ethical, practical and inexpensive training device using sewing needles. This training consists in microsurgery wire's passages in the eye of sewing needles arranged into a double circle. A specific scorecard for this exercise allowed us evaluating the students.

Summary of results: Between November 2010 and November 2011, fifteen residents followed the university degree in microsurgery. The ''double clock'' was added to the eight already existing microsurgical exercices. The mean time to perform a complete circle was 4 to 8 minutes. After practice, this time was decreased by 30%. 3 other criteria were evaluated : holding of the instrument, regularity of the gesture, quality of the nodes.

Conclusions: This exercise seems to be an effective teaching procedure. We could also reduce our animal control by 10% or about 30 rats.

Take-home messages: Thanks to this device, we improved students' microsurgical skills and also limited cost by using fewer animals.

3W/11
Using Plasticine to simulate skin lesions - evaluation of a novel teaching technique for medical students

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Background: The British Association of Dermatology recommends that description of cutaneous physical signs is an essential skill for medical undergraduates. It has been noted by the author that students find skin lesion terminology confusing. It appears that plasticine models of skin lesions have not previously been used to teach medical students about simple skin lesions.

Summary of work: 29 medical students attended a dermatology day and had not been introduced to skin description terminology prior to this course. The students received a lecture on history and examination followed by a practical session. Students were given pink and white plasticine and asked to make papules, macules, nodules, plaques, patches and pustules. They then received feedback on their models. Students were asked to evaluate the sessions on a four-point Likert scale – very useful / useful / fairly useful / not useful.

Summary of results: 96.6% rated the plasticine session as useful and it was found to be more useful that the history and examination lecture. The session was useful, interactive and allowed the tutor to assess whether the students had understood the difference between the types of skin lesions.

Conclusions: The session was useful, interactive and allowed the tutor to assess whether the students had understood the difference between the types of skin lesions.

Take-home messages: Using plasticine to make skin lesions may be a novel and entertaining way to teach description of cutaneous physical signs.

3W/12
Developing an affordable vital sign simulator for undergraduate clinical skills training

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Background: Vital sign examination is one of the required competence for a physician. Medical students in Faculty of Medicine Gadjah Mada University, learn the skill by examining peers or healthy simulated patients, in which they expect normal findings as the result. A vital sign simulator could help students to practice with abnormal condition. The aim is to develop an affordable and representative vital sign simulator that could help students to get better understanding on abnormal vital sign while practicing communication on their peers and simulated patients.

Summary of work: A vital sign simulator is developed by designing an actuator of blood pressure, temperature, and pulse. It is embedded in a thin, skin-colored jacket worn by students or simulated patients. A controller hardware is placed on the back of jacket where we could set the desired vital sign findings.

Summary of results: To use it in skills training, we could set the values based on the common clinical cases in our real and contextual setting, such as hypertension or shock. Students could practice their communication skills because the simulator is worn by patient. The development of vital sign simulator is currently in progress. It is necessary to develop this simulator to improve student's contextual learning in vital sign examination.

Conclusions: A vital sign simulator could offer the opportunity for students to obtain a desirable contextual vital sign findings, while maintaining communication with patients. It is affordable, representative, and convenient to use in undergraduate clinical skills training.

3W/13
Nasal model for anterior and posterior nasal packs practice in 5th year CMEC medical students: A Cross-sectional Analytic study

Watanaporn Vorasilapa (*Chonburi Medical Education Center, Otolaryngology Head and Neck Surgery, Chonburi, Thailand*)

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Background: Half-body models designed for cardiopulmonary resuscitation are traditionally used in Chonburi Medical Education Center(CMEC) for practicing anterior and posterior nasal packing in medical training. Recently nasal models, made from silicone putty coved by acrylic have been designed. The objective of the study is to compare the usefulness in training of the two models.

Summary of work: The fifth year medical studentspracticed anterior and posterior nasal packing by using two models. The 6-item model assessment questionnaire was used to assess the usefulness of each model.Paired-samples t-test was used for data analysis.

Summary of results: Thirty-one 5 th year medical students (71% female , mean age 22.8 ±0.4years) completed the model assessment questionnaire. The score of Nasal model (25.23± 2.61) was significantly greater than the Half-body model (22.60± 4.66), p < .01.

Conclusions: Nasal models are more suitable for practicing anterior and posterior nasal packs than Half-body models. Appropriately designed models may improve training quality and enhance students' skill.

3W/14
Evaluation of the five basic endo-surgical abilities through a simple simulator as a learning environment

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Background: Today's trend in the teaching of surgical abilities is the use of training models, which are expensive, but necessary. The objective of the present work was to evaluate the use of a simple simulator for surgical training in basic minimal invasive surgery.

Summary of work: A simple device was used. 7 students attending their social service and without laparoscopic training were chosen. 5 basic endo-surgical manoeuvres were performed, initially with direct vision and then through the training device. Of each manoeuvre 15 repetitions were made, and time vs. event graphs were plotted. Comparisons were done between the initial and final events in each one of the manoeuvres according to its approach.

Summary of results: The data collected showed a non-normal distribution in the majority of the manoeuvres that took place; the time consumed in its execution decreased until reaching an asymptote before concluding the repetitions in both events, however the internal events of realization time was longer (p>0.05).

Conclusions: Through this study we can see that through the usage of this simple model of laparoscopic simulator, the basic endo-surgical abilities can be developed, but the execution periods were diverse, and therefore we assume that the surgical endoscopic training should be individualized.

3W/15
Learning curves for endotracheal intubation using the Macintosh laryngoscope in nurse anesthetist students

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Background: Tracheal intubation is a potentially lifesaving procedure. This skill was taught to many anesthetic healthcare teams, including nurse anesthetists. Our goal was to evaluate learning ability of nurse anesthetist students in their performance of endotracheal intubation with Macintosh laryngoscope by using the cumulative summation (CUSUM) method.

Summary of work: Eleven nurse anesthetist students were enrolled in the study during the first three months of training. All participants attended formal lectures and practice sessions with manikins at least 2 times on performing tracheal intubation under supervision of anesthesiologist staff. Learning curves for each student were constructed with the standard CUSUM methods.

Summary of results: Tracheal intubation was attempted on 388 patients. Three hundred and six patients were successfully intubated on the students' first attempt, and 17 patients were successfully intubated on the second attempt. The mean + SD number of endotracheal intubation per student was 35.5 + 5.1 (range 30-47). Ten of 11 students crossed the 20% acceptable failure rate line. A median of 23 procedures were required to achieve an 80% endotracheal intubations success rate.

Conclusions: Eleven of 12 students achieved an 80% success rate for endotracheal intubation with Macintosh laryngoscope, and they did so after a median of 23 procedures.

Take-home messages: To achieve a successfully endotracheal intubation using Macintosh laryngoscope in non-experienced nurse anesthetist students at least 23 procedures were required.

3W/16
Using Bowel Anastomosis Simulators to Teach Advanced Suturing Techniques: a Pilot Project

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Background: There has been a long-standing basic suturing course at the LernKlinik Leipzig that taught simple suturing techniques and knot tying.

Summary of work: A course was designed to include two separate two-hour working sessions. A fully trained general and cardiovascular surgeon as well as several medical student tutors taught the courses. During the course, all students used the bowel simulators in groups of two to create a single-layer, running end-to-end hand-sewn bowel anastomosis.

Summary of results: In total, eight students completed both sessions of this pilot project. All students were able to complete the bowel anastomosis. Furthermore, by working in groups of two, the students fostered a team attitude while working toward a common goal. This skill is vital to success within the operating room. In all sessions, the verbal feedback from the students was very positive.

Conclusions: A bowel anastomosis is one of the more difficult surgical techniques to master. With the advent of simulators students will be able to practice outside of the human body to master techniques prior to attempting on a patient.

Take-home messages: With the advent of bowel simulators (Double Layer Bowel; Limbs and Things, Bristol, UK), advanced suturing techniques can be taught to medical students.

3W/17
High-fidelity simulation and continued training of health professionals. From guidelines to routine use

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Background: In France, routine use of simulation to develop effective working practices in the management of emergencies remains poorly described. The aim of this work is to present a training program using high-fidelity simulation for medicalised emergency and pre-hospitalisation teams.

Summary of work: Implementation of training sessions on high-fidelity simulators. The assessment of this program was conducted through two studies. The first focused on cardiopulmonary resuscitation allowed to measure the effectiveness of this training using the model of Kirkpatrick. The second examines the impact of high-fidelity simulation on self-efficacy about the management of critical paediatric emergencies

Summary of results: They also show an improvement in the care of cardiac arrest patients confirming an effective transfer of knowledge to the participants (p = 0.037). Results of the second study seem to confirm the importance of high-fidelity simulation to increase self-efficacy.

Conclusions: The results of these studies allow us to better understand the scope of simulation for training of health professionals. The establishment and continuity of this type of program requires a real commitment within the hospital administration to improved quality of care and risk prevention.

3X Posters: Research and Evidence Based Medicine

3X/1
Medical students' experience of Degree project course and its supervision

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Background: Degree projects are taking a more central role in higher education meaning significant resources and time of the curriculum is spent on developing research skills. Aim: To study expectations and experience of learning and supervision during Degree project course.
Summary of work: Totally 93 medical students were surveyed by questionnaires before and after the course.
Summary of results: 61 students (36 females; mean age 24.4 yrs) and 64 students (40 females; mean age 24.6 yrs) returned the questionnaires corresponding to response rates of 66% and 69%. Overall, students' expectations surmounted their experience of learning and supervision. The most developed skills were ability on a scientific basis to discuss facts and phenomenon, ability to critically review literature and scientific writing skills. Of all students, 19% had participated in writing of a scientific publication other than his/her own report and 67% announced that it will be very or rather likely that they will do research in the future.
Conclusions: Even if many of the learning outcomes were achieved to some or large extent students' expectations exceeded their experience of learning and supervision. The findings are thought provoking and may speak to the uncertain understanding of expectations, supervisor's role or students' own responsibility of learning.
Take-home messages: Significant resources and time of the curriculum is spent on developing research skills. thus, it's important to support supervisors and students in research environments as well as in the clinics.

3X/2
A "toolkit" for the promotion of undergraduate research: when students talk to students

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Background: Conducting research as an undergraduate can encourage later research interest, and develop critical reasoning and information literacy skills. At our institution few take up the opportunity. Led by two final-year medical students we developed an instrument that would guide undergraduate health sciences students in such work.
Summary of work: Drawing on their own research experiences, which included first author publications, the students addressed those aspects they had found to be challenging or of value, producing an artifact known as the 'toolkit'. A number of experienced researchers acted as supervisors on the project.
Summary of results: The toolkit comprises three documents. The first offers general guidelines on planning, designing and implementing research, followed by a discussion of quantitative and qualitative methodologies respectively. Twenty students - a marked increase in the number expressing interest in research over previous years - attended a Saturday seminar where the toolkit was explained and distributed.
Conclusions: Producing texts in a student-friendly, accessible format can build cognitive bridges that enable students to embrace alternative curricula options. Students themselves can play a key role in this process.
Take-home messages: Encouraging research at undergraduate level has the potential to enhance the student learning experience. Facilitating such participation with innovative, student-driven interventions provides an important catalyst in this context.

3X/3
Using the 4C/ID as model for Redesigning a Course in Evidence Based Medicine Course

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Background: EBM has been described as applying the best available research evidence in clinical decision making and patient care.
Traditionally courses in EBM are didactic in nature composed of lectures explaining the principles of EBM and how it can be applied in real practice. Students do not get any hands on training on the skills involved in practicing EBM. At the end of the course the students' knowledge is assessed using a written examination composed of MCQs. Students' evaluations have been negative and the department considered the redesign.
Summary of work: The aim of this innovation is to redesign a course in Evidence based medicine (EBM).
Summary of results: The new course was redesigned using the 4C/ID model. The involved teams were educational experts and an expert in EBM.
Conclusions: This study will find the real training blueprint with several learning tasks that were used in the updated course that will take place in the upcoming fall of 2011.

Take-home messages: This study can be as a guide to redesign any current course using the 4C/ID model.

3X/4

Types of research designs and quality performed by medical students of Phramongkutklao College of Medicine, Thailand

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Background: To strengthen undergraduate research, Phramongkutklao College of Medicine provides medical cadets with the foundation in research methodology beginning the preclinical years. Under the supervision of advisors, not only they become familiar with the research process and conduct valid research, they perform data analysis, interpret results, and make recommendations.
Summary of work: Research abstracts complied by the Third and the Sixth Year students from academic years 2002 to 2007 were evaluated for types of research designs and quality by three expertises using rating criteria. A total score was 100% and three levels of qualities: good, medium and fair were evaluated.
Summary of results: Of 110 abstracts, 90% was cross-sectional study, followed by cohort (4.5%), qualitative (3.6%) and case-control studies (1.8%). Mean score of research quality of 85 abstracts was 68.5% with the level of qualities was good (27%), medium (47.1%) and fair (25.9%). In depth analysis of each topic, the study title (62.4%), objectives, methodology and results (49.4%) were at medium level. Research conclusion (36.5%) was at good level while rationale and its application (35.3%) were at fair level. Improvement on English writing and statistical analysis was recommended.
Conclusions: This study provides information for quality improvement of research as well as reinforces research skills of Medical cadets.

3X/5

Intercalated degrees: students' perceptions of their value and the effect of the recent tuition fee rise

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Background: Intercalated degrees provide insight into the methodology and excitement involved in carrying out research. We aimed to assess medical students' views on the benefits and value of intercalated degrees, as well as the impact of the recent tuition fee rise.
Summary of work: A questionnaire was sent to 3rd, 4th and 5th year medical students at Sheffield and Bristol medical schools.
Summary of results: 578 students responded (previous intercalator response rate, 58% at Sheffield and 52% at Bristol). Students thought they had gained useful skills (98%) and it would improve their career prospects (83%). Clinical academic supervisors produced more first class honours (p=0.029), and these students had significantly more presentations (p=0.004) and publications (p<0.0001) compared to lower awards. 72% said they would not have intercalated if they had been faced with fees of £9,000.
Conclusions: Students do value intercalated degrees and having a clinical academic supervisor appears to improve academic outcome. The fee increase acts as a huge disincentive for an intercalated year.
Take-home messages: Intercalated degrees are crucial introductions to research, which enthuse many to undertake an academic career. The tuition fee rise may therefore cause a future decline in the already diminishing number of clinical academics.

3X/6

eSurveys: Strategies to optimise response and completion rates

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Background: Traditionally, paper based surveys and feedback forms have been used to seek the views and opinions of respondents. In recent times, the mechanism to do this has shifted with the introduction of online survey packages. However, the response and completion rates of eSurveys are variable highlighted by the poor response rates achieved by the General Medical Council (GMC) Trainee Survey.
Summary of work: The London School of Paediatrics embarked on a 12 month process of creating an online survey to quality assure postgraduate training. Careful consideration was given to the design, implementation and management of the survey to optimise response and completion rates. This was followed by a smaller scale survey regarding paediatric prescribing.
Summary of results: The first survey (n=840) achieved a response rate of 91% and a completion rate of 80%. The smaller survey (n=114) returned a response rate of 88% and completion rate of 86%.
Conclusions: Our work has demonstrated that high completion and response rates can be achieved in both large and small scale surveys of varying length.

Take-home messages: Careful consideration must be given to the design, implementation and management of eSurveys Time should be spent on these factors prior to release of the survey to optimise trainee participation.

3X/7

A Comprehensive and Active Educational Program for Medical Students to Attract Their Interests toward Research and Cultivate Physician Scientists at Keio University School of Medicine in Japan

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Background: To foster brilliant physician scientists is an important mission of medical education for the development of biomedical science and medical care. However, the declining medical research activity due to reduced number of medical students who aspire to do the medical research has become a significant problem in Japan recently.
Summary of work: We started an innovative educational program for medical students in 1989 to attract their interests toward research and encourage them to become physician scientists. In this program, all of our medical students were required to be directly engaged in research projects for > 4 months as a mandatory curriculum and presented their papers not only within the campus but also at international academic meetings.
Summary of results: An anonymous questionnaire survey to assess the effectiveness of this program was conducted in a cohort of medical students in year 2009-2011 (n=296). The overall response rate was 95%. Majority (78%) of students evaluated the efficacy of the program, in which 58% stated they were highly motivated to do medical research, because they could learn the significance and the methods of research and build the close relationship with the mentor-faculties as their carrier model.
Conclusions: The medical students have been highly motivated to become physician scientists through this program.

3X/8

Conversation, innovation, evidence, change. Improving research capacity in GP vocational training with Research Week

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Background: Australian GP vocational training occurs outside the University sector which limits access to academic expertise. Educational research requires careful design to achieve generalisable outcomes, but few medical educators in the vocational training sector have highly developed research competencies. Distance restricts the opportunities for educational and early career researchers to participate in research networks.
Summary of work: "Research Week" is an annual event which provides an innovative opportunity for registrars, supervisors and medical educators to meet and discuss research issues directly relevant to their roles. As a virtual conference, it offers all participants an opportunity to meet online, regardless of distance. It consists of an interactive web-site, with online workshops facilitated by national and international speakers. Evaluation of Research Week involves quantitative measures (eg participation rates) with qualitative data (eg interviews and written feedback).
Summary of results: Participants value the opportunity to network with like-minded colleagues, and appreciate that the conference is accessible and affordable. Events targeted towards medical education are highly valued. Technical and administrative support is crucial to the success of a virtual conference.
Conclusions: Building research capacity within vocational training requires opportunities learn skills that are directly relevant to the vocational training environment.
Take-home messages: Online research networks and events can enhance research capacity within vocational training.

3X/9

Has the student's thesis influence on the later medical career?

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Background: The curriculum of the medical study at NTNU includes a student's thesis performed during the 5th study year. One or two students together make a small scientific study under the supervision of a tutor. The thesis is presented in a booklet and in some cases it is published in national or international medical journals. The aim of our study was to investigate if this thesis had influenced the student's later medical career.
Summary of work: 676 students graduated from 2002 to 2011 received a questionnaire about the topic of their thesis, the experience with the process, the collaboration with their tutor and their postgraduate education and choice of specialty.
Summary of results: The response rate was 53%. The field of the research was in most cases (83.7%) chosen from its

specialty. 28.6% considered that the topic of the thesis was important for choosing their medical specialty. 55.5% reported that working with the thesis gave inspiration for further research.

Conclusions: This survey showed that student's thesis has great impact on the future interest in research, but was less important for choosing specialty.

Take-home messages: The main effect of student's thesis is stimulation for interest in research.

3X/10
Development and Evaluation of the Evidence-based Medicine Programme: A Spiral Approach

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Background: Evidence-based medicine (EBM) aims to provide skills that help doctors to answer clinically important questions and determine new evidence and put them into practice. In this research, we aim to evaluate the EBM programme.

Summary of work: We developed an EBM programme based on spiral approach that initiated in the first year and lasted in the first clinical year. The EBM program included an introductory lecture and practice. In the forth year, we integrated EBM with surgery clerkship. In that part of the programme students studied with collaborative teams. They revised basic concepts and practiced EBM with real clinical cases. In order to evaluate the EBM programme, we asked students to complete a questionnaire.

Summary of results: Almost half of the students stated that preclinical years of EBM programme were "adequate". But only 30% of students indicated that the practice of EBM was "adequate". They explained that "more practical approaches were used in the fourth year whereas more theory-based during the preclinical years". More than 75% of students declared that the practice of EBM in the fourth year were useful and appropriate for team-based learning.

Conclusions: Students evaluated EBM programme "adequate".

Take-home messages: The spiral approach is valuable for reinforcing and providing retention of EBM skills.

3X/11
What to choose? Medical students' use of evidence-based information resources

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Background: An understanding of evidence-based medicine (EBM) and how to implement it into clinical practice is an important skill that medical students need to understand and develop throughout their undergraduate education. There are a plethora of resources available to support evidence-based practice including journals, textbooks, medical school resources, applications for phones, and even social networking sites. But how do medical students decide which resources to utilise? The aim of this paper is to explore whether EBM impacts on medical students decisions to access information resources.

Summary of work: A qualitative study using stimulated recall interviews with 15 medical students (years 1-5) based in the Peninsula Medical School, Southwest of England. Participants kept a self-report diary of the information resources used over a week to use as the stimulus in the interview. The interviews used the diary information as the basis for discussing the rationales underpinning the information resources used. The data were thematically analysed using NVivo.

Summary of results: Despite students knowing how to appraise information resources, they mainly rely on their instinct and recommendations from peers, educators or seniors when choosing an information resource.

Conclusions: Medical students do not prioritise EBM when choosing information resources to support their learning.

Take-home messages: By understanding the information seeking behaviours of medical students we can work towards incorporating evidence into practice.

3X/12
Clinical practice guidelines as an integral part of undergraduate medical curricula

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Background: The Centre for Clinical Practice Guidelines of the Faculty of Medicine and Dentistry, Palacky University is concerned with issues of clinical practice guidelines (CPGs) as viewed from different perspectives. To disseminate knowledge on CPGs we have developed a comprehensive educational programme (CEP) for undergraduate medical students called The GIN Kindergarten in 2008.

Summary of work: We have developed a CEP focused on various aspects of CPGs and many workshops and lectures have been held since 2008. As a part of the CEP a series of lectures for final year medical students were listed in the standard curriculum as a compulsory subject in 2009/2010.

510 final year medical students have attended the lectures since 2009 in total.

Summary of results: Educational programme for undergraduate medical students focused on clinical practice guidelines development, adaptation, implementation and evaluation.

Conclusions: The lectures covered the basic principles of systematic development, adaptation, evaluation and implementation of CPGs as well as search strategies for best evidence, applied legal and ethical aspects. The European Resuscitation Council 2010 cardio-pulmonary resuscitation guidelines have been implementing and used to illustrate basic methodological principles. The part of the lecture is a training of CPR using a mannequin and two case scenarios.

Take-home messages: The best implementation strategy of CPGs is to incorporate them into medical curricula, particularly into undergraduate medical curricula. The use of the latest up-date of ERC CPR guidelines is very efficient way to show methodological principles and different aspects of CPGs in a clinical context.

3X/13
Case-based approach to teaching evidence based skills in paediatrics

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Background: The authors are presenting innovations of the existing evidence-based paediatric course at a 'bench to bedside' learning platform. Three-year experience based on the feedback gathered from students has demonstrated that paediatric actual clinical cases may improve uptake of EBM knowledge. The blended learning approach has proven practical due to convergence of online and F2F learning.

Summary of work: Students get formal training for use of online information resources by medical librarians, and can use self-learning and facilitated online modules. They work in pairs to solve a real patient case, ie. ask a clear clinical question, search for an article to answer the question, and present their evidence-based cases at a mini-conference. Their performance is then evaluated according to a set of predefined criteria by an assessment committee.

Summary of results: Based on the SWOT analysis a complex of innovative parameters was defined to eliminate the weaknesses: online collection of peer-reviewed students´ paediatric cases with repeated common diagnoses but different focused questions; lecture podcasts; PICO seminars for group discussion to frame clinical question; (e)-mentoring.

Conclusions: The innovative steps are demonstrated on an example of psychotherapy of a Crohn disease patient.

Take-home messages: Our experience has confirmed an essential educational value of the curriculum and its impact on future decision-making skills.

3X/14
Peer-assisted learning and journal club improves student understanding of basic evidence based medicine (EBM) skills

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Background: EBM is a fundamental part of modern medical practice. Glasgow Evidence Based Medicine Society (GEMS), a student led organisation provides extracurricular teaching and workshops in research and audit principles and reading/analysis of current literature.

Summary of work: Interactive workshops (during 2009/10) relating to research skills, audit and statistics were delivered by senior medical students (all possessing an intercalated degree BSc (Med Sci)) and academic clinicians. Journal club sessions were facilitated by consultants. Anonymous pre and post-course statistics assessments and evaluation forms were completed.

Summary of results: On average 12 (4-28) students participated in each workshop, typically a third year student with little or no research experience. The median scores for the statistics assessments (n=27) were 20% (0-61%) and 38% (26-84%) for pre-course and post-course respectively. 28 session evaluation forms were obtained for workshop, 'searching the literature'. 50% of students reported feeling confident afterwards, compared with 21% prior to session. 50% students reported feeling confident or very confident in reading and critiquing a paper compared to no reports of confidence prior to journal club (n=21).

Conclusions: A structured peer assisted course for medical students in evidence based medicine related skills has been demonstrated to increase student knowledge and confidence in these areas.

3Y Posters: Postgraduate Training 1

3Y/
A five session programme to prepare foundation year 2 (FY2) trainees for the challenges of caring for an ageing population

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Background: A 'gap' exists between the best evidence and the care delivered to older patients in the following domains:

1. Delirium; 2. Dementia; 3. Falls ; 4. Continence; 5. Complex chronic disease management. Little is known about what recent postgraduates want to or need to know. Thus, we developed an action research teaching project for our 32 FY2 trainees.

Summary of work: Five sessions, focusing on the above, were designed using the CanMEDS framework. Relevance to practice and interactivity were fundamental; methods included interactive case studies and simulated patients. Reflection was stressed throughout. In the final session, learners discussed reflective essays. Pre-and post-programme questionnaires examined what learners wanted to know, self-reported preparedness, and perceptions of elders.

Summary of results: Learners wanted to know about: polypharmacy, resuscitation decisions and the Liverpool Care Pathway. Activities addressing these topics were provided. Confidence and self-reported preparedness improved. Learners' perceptions of the elderly became more positive. Interactive activities (perceived as relevant) received positive feedback.

Conclusions: Focusing on common conditions and the complexity inherent in real-world practice appeared to improve self-reported preparedness and learners' perceptions of the elderly.

Take-home messages: A gap exists between best practice and actual care for the elderly. This can and must be tackled by providing relevant interactive activities that challenge trainees.

3Y/2
The Transformation of Medical Education Training in Singapore

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Background: This study looks into the shift in postgraduate medical training in Singapore from the UK-based system to a US-style residency system. It examines the changes and challenges that medical education in Singapore has undergone since the shift that was made in postgraduate medical training.

Summary of work: Singapore implemented a US-style residency system in 2009. The decision to shift to a US-style residency system was made in the basis of innovating and adopting the best practices in education to constantly meet the demands of advancing healthcare and a growing ageing population. The program consists of formative model for quality training, where the learning process is enhanced through the 6 core competencies.

Summary of results: A teaching faculty was appointed with well-defined roles and responsibilities. The curriculum was

defined for each specialty, with specified learning objectives and experiences, graded and progressive responsibilities, and with regular formative evaluation to assess competencies at each stage of training.

Conclusions: The challenge was profound and unyielding, given only less than 2 years to prepare and to set up the new system, but the hospital took the challenge with optimism and certainty.

Take-home messages: With this shift, graduate training will provide a structured curriculum to the medical students.

3Y/3
An ongoing study into the role of junior doctors in preparing new FY1s for professional practice with the introduction of the FY2 mentor scheme

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Background: An evaluation of the induction programme at this Trust was conducted in 2010 and presented at the AMEE conference (Williamson et al; Evaluating the role of junior doctors in preparing new FY1s for professional practice.) As a result, our new induction programme incorporated clinical and practical presentations by departing FY1s. This Trust has FY2 doctors who have also completed their FY1 year here and are therefore familiar with the Trust.

Summary of work: A questionnaire was produced for current FY1s, evaluating how well-prepared they felt after induction and their opinions on introducing named FY2 'mentors' to provide ongoing support. On the basis of questionnaire outcomes, the induction programme will be adjusted to better meet their learning needs, with introduction of FY2 'mentors'. A follow-up questionnaire in August 2012 will then assess responses to the induction programme and uptake of the new FY2 'mentor' system.

Summary of results: FY1s would welcome the introduction of FY2 mentors. Full results to be confirmed on completion of the follow-up questionnaire.

Conclusions: Full results to be confirmed.

Take-home messages: The previous work conducted at our trust suggested a change in the induction programme. We aim to introduce the FY2 mentor scheme alongside a tailored induction programme to provide a more longitudinal approach to induction.

3Y/4
Using local educational audits to improve the quality of the Foundation School Directors' reports - 'the e-portfolio for programmes'

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Background: The North Western Foundation School introduced annual Foundation Programme Director (FPD) reports in March 2009. Programmes found the report deadline challenging, and many reports lacked any supporting evidence. One item of evidence that was particularly lacking was the local educational audits (LEA). Here, programmes varied in their methodology and content- some audited their practices whereas others failed to do so. Those that did audit, showed a wide variation in content that was needed to support the FPD report dataset.
Summary of work: All the local educational audits from the Foundation Schools (FS) in the North Western Deanery were collated. Only 37.5% of these schools had audits, these handful of audits were then dissected.
Summary of results: A new LEA proforma was drafted using General Medical Council domains, it included a minimum set of trainer feedback - that fully supports the FPD report format. The new proforma was piloted amongst foundation trainees. This allowed us to alter the style of questions, keeping the content/outcomes the same.
Conclusions: Overall, this will help ensure a consistency of reporting amongst the FS with strong supporting evidence. Furthermore, an automated audit and report processing system could be developed as a result.
Take-home messages: By having a such a high standard of LEAs, this will help improve the overall delivery of the foundation training programme within the deanery.

3Y/5
Professional Skills Programme for Foundation Doctors - a multidisciplinary approach

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Background: The Professional Skills Programme for Foundation Year 2 doctors was established in response to Modernising Medical Careers (MMC). This multidisciplinary programme is unique in that it is facilitated by hospital consultants, GP Trainers and university academics.
Summary of work: The programme addresses six themes: Professionalism and Judgement, Teaching and Learning, Team working and Leadership, Accountability in Medicine, Relationship between medicine and society and Relationship with patients. These one-day teaching sessions are delivered in a university setting away from the hospital environment.
Summary of results: Foundation Trainees and Clinical Supervisors were surveyed by means of a questionnaire. Semi-structured interviews were conducted for Clinical Tutors, University Lecturers and General Practitioners Tutors. Responses were analyzed using SPSS and were compared with transcribed data from the semi-structured interviews, using a thematic approach.

Conclusions: Findings confirm the programme is valued by trainees, providing protected time away from the hospital setting, a safe environment for open discussion and reflection on non-clinical topics. Multiprofessional teaching enriches the learning, exposes the trainees to role models and delivers aspects of the curriculum not easily covered elsewhere.
Take-home messages: During this one year programme Foundation trainees develop key professional skills and knowledge, setting them up at an early stage in their careers to become self directed,reflective practitioners.

3Y/6
Survey of causes of stress and anxiety in junior doctors

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Background: Stress and anxiety is common in junior doctors and contributes to health-related absences from work. It is necessary to identify the factors that contribute most to stress and anxiety in junior doctors in order to tackle this problem.
Summary of work: All trainees in the Northern Deanery Foundation School were surveyed and given free text space to describe their experience of stress and anxiety as a foundation doctor. Responses which related to cause were recorded by theme.
Summary of results: 278 causative associations were made. The five most commonly cited causes were workload (22%), out-of-standard-hours work (22%), lack of clinical support/supervision (14%), understaffing (9%), and difficult/sick patients (7%).
Conclusions: The four commonest causes of stress and anxiety were linked to work patterns, personnel arrangements and other staff. Sick patients were cited as a cause in only 7% of responses. These results suggest that junior doctors feel that organisational factors, including clinical support structures, cause them more stress and anxiety than treating unwell patients.
Take-home messages: Junior doctors will encounter inevitably stressful situations including managing very sick patients. However, the majority of stress and anxiety reported was associated with organisational issues. These should be addressed either by organisational change or better preparing graduates for the non-clinical challenges of professional practice.

3Y/7
Levels of anxiety and preparedness for work in the F1 2011 cohort: results of a national survey

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Background: For the 2011 UK F1 cohort, induction programmes were implemented in many Trusts to better prepare F1s for their jobs. This national survey had 3 aims: 1. assess whether F1s in the 2011 cohort felt adequately prepared for their post, 2. measure anxiety levels, and 3. generate hypotheses for future research.

Summary of work: An online survey was designed consisting of three sections: 1. questions to assess how prepared F1s felt, 2. the Leeds Self-Assessment of Anxiety General Scale, a validated questionnaire to screen for pathological anxiety, and 3. general demographic and other relevant questions. F1s were asked to complete the survey within four weeks of starting work.

Summary of results: 7069 F1s work in the UK, of which 892 completed the survey (12.6%). Overall, F1s felt prepared for their jobs, however, 26.7% screened positive for pathological anxiety. There was no significant difference in the number that screened positive between foundation schools ($p=0.4676$) or between medical schools ($p=0.4880$). Future research should determine reasons for F1 anxiety and investigate effects of increased shadowing time.

Conclusions: F1s generally felt prepared for their jobs. 26.7% screened positive for pathological anxiety, although there was no significant difference in anxiety levels between medical schools and foundation schools.

3Y/8
The correlation between the graduation result and the performance in the PGY application test

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Background: We aimed to determine the correlation between the graduation result and the performance in the post-graduate year (PGY) application test.

Summary of work: In 2011, 211 students who completed their one-year internship training applied for the PGY training program at Chang Gung Memorial Hospital. Two parts of the tests were included in the evaluation: MCQ with 50 single-answer test and 6-structure oral test. The graduation rank was used to compare with the result. Spearman's correlation co-efficient and Wilcoxon rank sum test were used to analyze the correlation and statistical significance.

Summary of results: The mean MCQ test and oral test scores were 64 and 83. The mean graduation rank was 63. All of the scores revealed a normal distribution. There were higher correlations between the oral test, final score and graduation rank in those students who were accepted an internship training program at Chang Gung Memorial Hospital (0.559, 0.535), but not in the students took training program at other hospitals.

Conclusions: The MCQ and the oral test are effective tools for the evaluation of learning result. They are valuable in the evaluation of students' medical education. But there is no obvious correlation between them with the graduation rank.

Take-home messages: A well-planned internship training program could provide a good learning result. There is no obvious correlation between the test and the graduation result.

3Y/9
Correlation of self assessment and interns' CPR knowledge in Kashan University of Medical Sciences in 2012

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Background: Due to the effective role of assessment in improving programs, it is important to confirm the results of different assessments by their correlation and continuity.

Summary of work: Participants completed two valid tests of self assessment and evaluation knowledge.

Summary of results: The interns' self assessment test mean score was $7.65/20\pm3.89$ and their CPR knowledge test mean score was $6.4/20\pm1.87$. Correlation between self assessment and knowledge scores is translated into $r=0.34$ and $p=0.03$.

Conclusions: Both self assessment and knowledge evaluation tests confirmed that interns need to upgrade their CPR knowledge.

3Y/10
Scandinavian advanced educational programmes for improved quality of care

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Background: Postgraduate training in anaesthesiology provides the knowledge, skills and attitudes needed in different levels and fields of specialised health care. Our Scandinavian Society has supported the development of five advanced educational programmes giving particular medical qualification. The purpose of this abstract is to describe the background and development of these programmes.

Summary of work: The first programme was started in 1998 and now there are five biannual programmes running. There are 4-6 modules with campus days in each programme as well as clinical rotations including elective period in another country. Assessment consists of e-learning modules and a scientific project. The are tutors and participants from all five Scandinavian countries.

Summary of results: Up to this day, about 400 participants have attended the programme. The feedback has been encouraging. The heads in the departments in the Scandinavian Countries support the programmes. No all participants get their diplomas and it will be our aim to improve the rate.

Conclusions: The advanced programmes have been a success and they continue to develop. Their greatest achievements is the increased level of specific knowledge, quality of care and patient safety.

Take-home messages: The greatest benefit of the AEPs is both the high scientific quality of instruction and the possibility for Scandinavian networking.

3Y/11
Self-reflection on newly developed postgraduate infectious diseases fellowship programs: An eight year experience in Japan

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Background: The subspecialty of infectious diseases is a new area of expertise in Japan. Postgraduate infectious diseases fellowship programs have been implemented since 2004. To assure the quality of training, both internal and external evaluations of each program are essential.

Summary of work: Four representative programs were sampled for this study. Program directors were asked to reflect on their program and respond via email. Evaluation of the training program was performed by referring to the requirements (16 items) of the Infectious Diseases Society of America. Each item was evaluated on a scale of 0-2 (0: not met, 1: partially met, 2: met). Strengths, weaknesses, opportunities, and threats of the program were also evaluated.

Summary of results: The total scores were 19, 24, 17, and 21 (out of 32). Mutual strengths identified were the mixture of cases and interprofessional communication skills, while weaknesses identified included less experience with HIV/AIDS, transplant, and sexually transmitted diseases, and research opportunities.

Conclusions: Self-reflection was useful for the quality assurance of the postgraduate infectious diseases fellowship programs in Japan. Areas identified should be targeted for improvement.

Take-home messages: Core competencies should be defined nationally or internationally for external evaluation to continue quality improvement of postgraduate infectious diseases fellowship programs in Japan.

3Y/12
Major complaints of medical residents (MR) in Brazil

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Background: Since 1977 Brazil Residency is regulated, supervised and evaluated by a National Commission (NC), composed by representatives of medical organizations, ministries of health and education, state and local council of health secretaries, the association of MR associations and medical schools. NC works hard towards to the development of residency as a mode of pos graduate education, characterized by in service training under guidance of medical professionals, ethically and professionally highest qualified.

Summary of work: Descriptive analysis of 52 spontaneous reports submitted to the CN by MR in the period 01/03/2011 to 31/12/2011.

Summary of results: Among the main described inadequate conditions (n = 61) the main complaints were lack of supervision (32.9%), irregularities in the internships and on pedagogic project (25.6%), excessive workload (19.5%), insufficient number of procedures for skills development (14.6%), lack of infrastructure, including lack of medical equipment (13.4%), lack of MR assessment (12.2%), insufficiency in number and qualification of staff in medical education (11%), personal devaluation process of MR (8.5%).

Conclusions: MR spontaneous complaints to the NC reveal the main aspects to be improved in order to meet the skills sought in this medical education segment

Take-home messages: Better infrastructure and increasing residency instructors qualifications are important keys to enhance residency education in Brazil.

3Y/13
Assessing 'Uncertainty' in Resident Trainees in a Seminar Setting. Application of a 'Script Concordance' Model

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Background: Structured seminars directed by faculty often explore trainees' knowledge in search of 'right' answers. However, there are levels of uncertainty in knowledge, synthesizing data and establishing a diagnosis and management plan. The 'script concordance model' (SCM) has been proposed to address uncertainty in assessment of trainees. This study assayed using SCM in a seminar setting. We hypothesize that the SCM will provide a tool to structure discussion, explore 'uncertainty', engage learners and enrich the seminar experience.
Summary of work: Trainees attended seminars presented in traditional and 'uncertainty' formats. The traditional format consisted of a set presentation with discussion; the uncertainty format included SCM questions. The trainees' attitudes to each format were noted.
Summary of results: 5 residents attended 2 seminars of each format. Objective measures of discussion time (22 vs 15 min), depth (3+ vs 1+) and additional questions (12 vs 4) were greater with the 'uncertainty' format. Subjective measures of interest, attention, new learning and intent to learn more favored the 'uncertainty' model.
Conclusions: In this small study, these results suggest that an 'uncertainty' format has a positive impact on the efficacy of seminars as a learning environment.
Take-home messages: These results suggest that an 'uncertainty' format has a positive impact on the efficacy of seminars as a learning environment.

3Y/14
Ideal design of a postgraduate interprofessional blended learning concept to improve paediatric emergency care: results of a focus group study among participants and tutors

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Background: We have developed an interprofessional blended learning concept, consisting of Virtual Patients (VP), online discussions, booklet on house intern paediatric emergency guidelines and practical training for physicians and nursing staff. In contrast to student training there is little data concerning the use of blended learning in continuing medical education, particularly inter-professional training. Our research question is how such training should be ideally designed from the participants and tutor perspective after participating in the above mentioned program.
Summary of work: In May 2012 more than 50 physicians, 50 nursing professionals and 12 tutors will participate in the above mentioned paediatric emergency training. We will perform focus group studies with both physicians and nursing staff and tutors. Focus group discussions will be videotaped, transcribed and analyzed according to international standards. Furthermore we will analyze the VP and overall program by questionnaires studies.
Summary of results: The results of the focus group analyses and questionnaires studies will be presented and discussed.
Conclusions: We will present the results of the above mentioned study and draw conclusions for the ideal design of such a training program.
This project is supported by the Klaus Tschira Foundation gGmbh.

3Y/15
How Do We Diagnose and Remediate the Problem Resident?

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Background: It is unclear what specifically constitutes a "problem resident" and optimal remediation. The objective of this study was to describe strategies for diagnosing the areas of concern and remediation processes.
Summary of work: This was a qualitative study using semi-structured interviews of a convenience sample of 11 Emergency Medicine Program directors. They were asked to describe specific residents who they defined as a "problem resident." Grounded theory analysis determined themes.
Summary of results: 2 themes were identified. The first theme was that it is difficult to find an effective diagnostic strategy determine where the problems lay. The second theme was the variety of remediation strategies attempted. For many residents, there was overlap between the process of diagnosis and remediation with the resident receiving special attention to both identify and "fix" the problem. There were 2 main strategies for both diagnosis and remediation. 1) one-on-one meetings, 2) clinical work (direct observation, daily shift evaluations, simulation lab or simulated cases). Additional remediation strategies included: administrative warnings; setting specific behavioral plans Strategies met with varying success, and there did not appear to be any one strategy guaranteed to address resident problems.
Conclusions: Residency leaders have difficulty recognizing when a resident becomes a problem, diagnosing the problem, and effective remediation.

3Y/16

Identification of acquired skills and learning needs: are residents ready for continuing medical education?

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Background: The perception of residents both about the embodied skills and learning needs can help them foster continuing medical education after completing the residency program.
Summary of work: A supervisor and six residents chosen by convenience held a focus group. The accounts of residents were recorded on audio and on paper by two other supervisors who observed the group. Data were analyzed using qualitative methodology.
Summary of results: All residents reported as having learned to identify both parents' and children's complaints and concerns and the fears associated with these. They also highlighted that in spite of their difficulty in shared decision-making, they are trying to accomplish it. Communication with the child, especially about health problems, was identified as fundamental in diagnostic and therapeutic processes and as something for further training. Besides the improvement of these skills they want to learn how to manage time more efficiently. All residents declared they are planning to continue their studies and training to accomplish these goals.
Conclusions: Residents are able to critically appraisal what they have learned and what needs further training.
Take-home messages: Assessment of the perception of residents can be used as a tool for guiding continuing medical education.

3Y/17

What are patients' complaints about residents and what are the costs?

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Background: Complaints from patients relate also to residents. In some cases this leads to a claim. As a teaching hospital it is important to have insight into complaints, especially regarding residents. A clear policy on how to manage them is necessary.
Summary of work: From 2008-2011 all complainers and complaints were evaluated, also regarding residents. Complaints were put to competent officials, medical board committee or insurance company. Complaints were sorted out (a) by discipline and (b) whether it referred to a faculty or a resident. The patient complaints regarding residents were categorized according to the CanMEDS competencies. Total costs of claims regarding residents were calculated.
Summary of results: From all received patient complaints 9,7% (n=306) are related to the residents. Mean percentage of non-surgical disciplines was slightly higher than for surgical disciplines. Most complaints about residents are related to the following CanMEDS roles: Communicator (41%), Medical Expert (31%) and Manager (12%). Five complaints lead to an allotted claim, total costs were €16.000.
Conclusions: The results demonstrate that residents have to cope with complaints. Costs of complaints that lead to claims are small. The hospital, medical board and course directors need to pay more attention to this subject in combination with stated CanMEDS competencies.
Take-home messages: Education on handling complaints for residents is necessary.

3Y/18

A Nighttime Curriculum for Pediatric Residents using Peer Teaching

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Background: Pediatric residents on the ward night shift at our institution had not previously received structured learning throughout the evening.
Summary of work: We implemented a nighttime curriculum in which the upper level residents, having received initial training from faculty, administer up to twelve "mini-codes" to the interns over the course of the one-month rotation. The team works through an individual patient simulation in a step-by-step manner requiring interns to make appropriate management decisions involving cases of respiratory distress, shock, cardiac arrhythmias, and electrolyte emergencies. During the scenarios, which are available on iPads, learners are expected to determine correct doses and draw up medications from a mock crash cart and practice procedural skills using a manikin. Following the mini-code, interns and residents can read supplementary material pertaining to the case, answer practice questions, view procedural how-to videos, and watch didactic videos from our faculty on the iPads.
Summary of results: The new curriculum allows our interns to feel more comfortable with acute management of pediatric emergencies on the ward while empowering the upper level residents to become more effective teachers.
Conclusions: A nighttime curriculum that utilizes peer teaching can be an effective strategy in the face of limited faculty availability.
Take-home messages: After-hours structured learning may not require in-house faculty.

3Y/19

A study evaluating the clerking activity of FY1 doctors at a London hospital and the perceived quality of clerking as a learning tool

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Background: Every patient admitted to hospital in the UK is clerked by a junior and presented to a consultant. This act of clerking, presenting and discussing a case with a consultant represents a powerful learning tool for FY1 doctors in their first year of training.
Summary of work: This report looks at the quantity of clerking done by FY1s at London hospital and the perceived quality of this learning experience compared with other learning experiences available. The clerking activity of 25 FY1s was retrospectively reviewed between August 2010 and July 2011.
Summary of results: The average number of patients clerked was 10.2 per doctor. The majority (64%) had clerked between 0 and 10 patients. 84% of FY1s asked did not feel they had gained adequate experience clerking patients. 64% of FY1s considered clerking and presenting a new patient the most valuable learning experience available to them.
Conclusions: Clerking, presenting and discussing a patient with a consultant is a powerful learning tool that is valued by FY1s. FY1s are not getting enough experience clerking new patients and valuable learning opportunities are being missed.
Take-home messages: Efforts need to be made to ensure FY1s are clerking patients frequently to ensure that learning opportunities are not missed and FY1s are prepared for progression.

3Z Posters: Problem Based Learning

3Z/1
Role of PBL in undergraduate medical education – Survey from UK medical schools

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Background: Problem based learning (PBL) involves the use of clinical problems as a context for the acquisition of knowledge and clinical skills. PBL-based curricula are usually organised around organ systems (cardiovascular/neurological etc). However, PBL scenarios in undergraduate medical education are usually non-psychiatric cases and learning outcomes related to psychiatry are delivered in the context of these cases. Clinical psychiatric cases are then introduced usually in years 4 or 5. This lack of integration of psychiatry is

particularly unfortunate as it is estimated that up to 40% of presentations in general practice and in medical disciplines such as neurology, rheumatology and cardiology may have a medically unexplained symptoms, a large proportion of which may be explainable due to psychiatric causes.
Summary of work: A survey of all UK Medical Schools was conducted to ascertain whether PBL schools use psychiatry cases at all as a mode of instruction in the pre-clinical years and if they did, then to obtain the details of the cases used.
Conclusions: PBL schools seem not to use psychiatric cases as PBL scenarios.
Take-home messages: Stigma about psychiatry is likely to reinforced by the lack of psychiatric scenarios in PBL curricula.

3Z/2

Contribution of instructional activities to learning in a blended problem-based learning (PBL) context

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Background: PBL may be complemented by additional instructional activities, but their roles in learning are less documented. In this study we aimed to analyze the contributions of PBL tutorials and complementary instructional activities to learning.
Summary of work: Methods: Data derived from 412 systematic evaluations of nine preclinical instructional units (PIUs) during two academic years. A 26-item evaluation questionnaire assessed several aspects of learning in each PIU (5-point Likert scale). Multivariate regression models analyzed the contribution of four different predictors (tutorials, lectures/seminars, practice labs and clinical skills) to students' perception of learning a great deal during each PIU (outcome).
Summary of results: Overall rating scores were >3.5 and relatively stable across PIUs. PBL tutorials were the main determinant of learning (r2=0.45 to 0.19; p<0.001 across PIUs). Sensitivity analysis excluding tutorials confirmed that complementary instructional activities were less relevant predictors of learning (r2=0.051 to 0.031, respectively for lectures/seminars and practice labs).
Conclusions: Findings from this study ensure that tutorials remain the dominant component of learning in a blended PBL preclinical program. The contribution of complementary instructional activities will be discussed in the context of a PBL curriculum.
Take-home messages: Tutorials are endorsed as the main contributor to learning in a blended PBL context.

3Z/3

The integration of blended learning in a PBL based medical curriculum

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Background: The integration of eLearning along with other teaching methods has come to be known as 'Blended Learning'. Studies into the implementation of blended learning in a PBL based medical curriculum are lacking. Hence it would be interesting to assess the implementation of blended learning in a PBL based medical course, as the fundamentals of problem based learning focus on, self-direction and motivation and implementation of resources, all of which are factors suited to eLearning.
Summary of work: A questionnaire was developed and given out to 4th year students at Manchester Medical School to gain an insight into their views on a newly piloted eLearning package that has been introduced to the curriculum. Also usage statistics of the eLearning resources were analysed.
Summary of results: 164 students responded to the survey. Results showed a very strong response in favour of eLearning components alongside current PBL teaching methods, with 92% of students asserting the added value of eLearning resources. Advantages and disadvantages eLearning previously outlined in the literature were also affirmed.
Conclusions: Student strongly supported the incorporation of eLearning supporting materials, and highlighted their perceived benefit in using these materials in addition to current PBL teaching.
Take-home messages: Blended learning may have a significant role to play in a PBL based medical course.

3Z/4

Pilot project about the use of problem based learning (PBL) in veterinary biochemistry

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Background: Problem based learning (PBL) is widely used in clinical training but in limited range in basic subjects. The aim of our study was to compare learning success and student satisfaction level after biochemistry class on colostrum performed with or without PBL system.
Summary of work: Two groups of II year veterinary students (A n=25, B n=34) were introduced to ill calf and puppies and asked to solve the problem related to colostrum intake while other two groups (C n=32, D n=33) participated in class on similar topic but taught in classic way. Next week all 4 groups had written multiple choice test checking their knowledge on colostrum. Moreover, the discussions with students of A and B groups on their opinions about PBL class was performed.
Summary of results: The analysis of statistical comparisons of tests showed significantly better results in groups A and B than C and D. Students more preferred PBL as classic teaching.
Conclusions: PBL way of teaching allowed for better memorization and increased student satisfaction level. The class was more interesting and motivating for wider studying interdisciplinary approach in biochemical subjects and the same allowed for the integration between clinical and basic subjects.
Take-home messages: PBL could be also used for effective teaching veterinary basic-sciences.

3Z/5

Scenemulator: An effective tutor note to facilitate non-specialist tutor in PBL tutorial session

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Background: This study aimed to determine which tutor notes (scenemulators = scenario + simulator + tutor notes and a typical one) is best to ensure effectiveness amongst TU preclinical tutors to facilitate in tutorial session.
Summary of work: After finish each scenarios, preclinical-tutors at the Faulty of Medicine, TU (n=23) were assigned to complete of twenty-two items with a five rating scale questionnaire. Thirteen and six were the topics efficiency and the comparative satisfaction, respectively. The last three being the tutor note mostly needed. Once complete the entire questionnaire, data was analyzed using mean ± SD and pair-t test.
Summary of results: From the response data (85% response rate), mean scores (M) on the topics efficiency were above 4.5. When compare with scenemulator, mean scores of regular tutor note was in acceptable scale (M=3). Interestingly, the more clearly preferable tutor notes were scenemulator (p-value <0.001).
Conclusions: This study demonstrated the potential of scenemulators in filling up uncertain significant matters being hardly specified in seven steps of PBL. Additionally, scenemulators was the effective tool to assist non-specialist PBL tutor much more confidence to facilitate in tutorial session.
Take-home messages: Implementation of scenemulators in other blocks should be considered. This approach might standardize multidiscipline non-MD tutors to completely facilitate tutorial session.

3Z/6

Integrating anatomy into the clinical curriculum: are we trying hard enough?

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Background: PBL curricula often integrate clinical science into early years of medical courses with little basic science integration into later years. There is a perceived deficiency in medical students' anatomical knowledge. Could this be due to the curriculum failing to bridge the gap between theory and practice?
Summary of work: Clinicians assessed the 3rd-5th year curriculum, documenting if appropriate anatomical learning objectives were revisited using criteria based on anatomical knowledge required to understand clinical conditions and what a foundation doctor should know. Lectures were analysed to see if salient anatomy was linked to clinical conditions.
Summary of results: 59 new learning objectives were added to the curriculum. 76 lectures were identified where knowledge of anatomy was felt to be essential to contextualise and fully appreciate the subject matter. 33% did not include an anatomical review.
Conclusions: The clinical curriculum lacks functional anatomy and significant numbers of clinicians do not integrate anatomy into teaching, commonly focusing on personal interests rather than lecture objectives. The school has new guidelines instructing lecturers to spend at least 80% of the lecture on recommended objectives.
Take-home messages: Clinical lecturers' awareness of constructivism where prior knowledge is accessed and built upon will encourage students reinforce basic sciences, linking theory to clinical practice.

3Z/7

Applied clinical sciences within the undergraduate medical curriculum: Student reaction to a lecture-based course delivered within a problem-based learning (PBL) programme

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Background: In recent times there has been a shift from traditional didactic teaching to student-led, problem-based approaches. In our institution, the applied science topics were mostly covered through problem-based learning (PBL) sessions. Feedback from students suggested that the acquired knowledge base in these areas was lacking. In response, an applied sciences lecture programme was initiated.
Summary of work: A course of applied science lectures was delivered to year 3 medical students. They covered areas relevant to the existing curriculum. Lectures were recorded and uploaded onto the internet. An audience response system was used to collect data after each lecture. An end of course questionnaire was distributed.
Summary of results: 94% agreed or strongly agreed that the lectures were relevant. 94% rated the lectures as good, very good or excellent. Students perceived an improvement in knowledge. 80% of students felt topics tackled during the lectures could not be covered solely within a PBL setting.
Conclusions: A lecture-based applied sciences course was well received by students working within a problem-based learning (PBL) curriculum. The majority of students felt that the topics covered could not be adequately covered solely within a PBL setting.
Take-home messages: Feedback from students suggests that teaching modalities other than problem-based scenarios are required to adequately cover applied science topics.

3Z/8

A tool to analyse potential disciplinary threats to an integrated medical problem-based learning curriculum

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Background: Tensions may arise in problem-based learning (PBL) medical curricula between ensuring students are adequately grounded in basic medical sciences and their being able to integrate clinically relevant knowledge across disciplinary boundaries. One suggestion to address these tensions is to set subminima in certain disciplines in order to pass a course. A tool was created in MS Excel to identify possible consequences of introducing subminima by simulating scenarios using retrospective assessment data.
Summary of work: From 2008-2011, eight-hundred-and-one students completed our 2nd year MBChB course. Data was extracted for each contributing discipline from over 120,000 mark entries to calculate each student's "disciplinary" year

marks. Various subminima were applied to groups of disciplines and the pass rates calculated.

Summary of results: The actual mean pass rate from 2008-2011 was 86.8%. If a subminimum of 50% is applied retrospectively to a proposed group of disciplines, the mean pass rate falls to 69.9%, more than doubling the actual failure rate; for a subminimum of 45%, the pass rate is 72.6%.

Conclusions: The unanticipated massive changes in pass rates have cautioned the implementation of subminima.

Take-home messages: Retrospective mark analysis may be helpful in anticipating the effect of assessment changes on pass rate and in identifying corrective interventions. This work addresses only some issues of subminima in PBL.

3Z/9
The analysis of verbal interaction in problem-based-learning according to tutorial period

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Background: The purpose of this study was to analyze the verbal interaction in PBL small group discussion according to tutorial period. This study concerned how the types of interactions are composed over the meeting time.

Summary of work: The subjects were 9, a tutorial group in third-year of Chonnam National University Medical School, Korea. Two tutorial sessions were videotaped and analyzed (first, middle, final time). All discourses of videotaped were made a word-for-word to analyze the interaction type. The criteria of interaction analysis were learning-oriented interaction (exploratory questioning, cumulative reasoning, handling conflicts about the knowledge), procedural interactions, and irrelevant task interactions .

Summary of results: Almost all discourses of tutor's and students' were learning-oriented interactions. As tutorial time passed, the procedural and irrelevant/off-task interactions showed less and less than the first period. The exploratory questioning and handling conflicts about knowledge appeared more and more at final period. We found tutor's role was a very inactive observer and his interaction type was mainly focused on procedural interactions.

Conclusions: With accumulated PBL experience, the exploratory questioning and handling conflicts about knowledge more showed than the first period. On the other hand, the procedural and irrelevant/off-task interactions were less appeared than the first period. PBL experiences would stimulate problem solving competence and communication skills.

Take-home messages: To improve problem-solving competence in PBL, we should consider various efforts to encourage discussion about conflicted knowledge and exploratory questioning. PBL tutor training program should provide to advance a facilitative PBL group discussion

3Z/10
The application of panel discussion for Problem-Based Learning in preclinical curriculum

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Background: The clinical reasoning skill is vital in medical education. We integrated panel discussion in a preclinical curriculum to expose the student on how to approach the patient's problem in clinical practice.

Summary of work: Students (N = 183) enrolled in study block "Application of medical science" were divided to small group and oriented of the learning activity. Scenario opening session in small groups was followed by conclusion session in panel discussion in which assigned students presented and discussed problems in by history and physical examination, laboratory investigation, diagnosis, and treatment. Instructor who prepared the scenario acted as a moderator. Resource persons (expert physicians and scientists) clarified, commented and discussed the important points. At the end, students evaluated the block using questionnaire.

Summary of results: With 85% response rate, mean scores on efficiency of each scenario in panel discussion were above 4 (max. score = 5). Panel discussion increased student-student/student-instructor-interaction, clinical reasoning skill and interdisciplinary domains and integration of knowledge.

Conclusions: Panel discussion provided factual and conceptual knowledge, enhanced logical thinking, and clarified theories and principles on clinical approach in preclinical year, and hence should be applied in other blocks.

3Z/11
Effectiveness of a simulation integrated with problem based learning (SIM-PBL) for undergraduate nursing students – A module of nursing care for children with asthma

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Background: Few nursing students in children's health clinical practicum are trained for nursing care in emergency conditions such as children with exacerbated asthma.

Summary of work: A two-group nonequivalent quasi-experimental study was taken to evaluate the effectiveness of a simulation integrated with problem based learning (SIM-PBL) module of children with asthma on self-efficacy (SE), knowledge and clinical performance of undergraduate nursing students. Nine students of the intervention group received a 3-hour SIM-PBL training and same number of students in the control group received regular clinical practicum of children's health nursing.

Summary of results: After the SIM-PBL and the regular practicum, the improvements of the intervention group were all higher than the control group both in knowledge (7.7±1.0 vs -0.4±1.5; t=2.54, p=.019) and SE (63.7±32.9 vs 9.2±24.3; t=2.76, p=.012). OSCE was also applied to evaluate clinical performance for both groups and the mean scores of OSCE were higher in the intervention group (24.2 ±3.0 vs 20.4±2.1; t=3.09, p=.007).

Conclusions: The SIM-PBL program improved nursing students' clinical performance, SE and knowledge in nursing care for children with asthma.

Take-home messages: It would be valuable to develop the SIM-PBL modules with various nursing topics. This study was supported by Basic Science Research Program of the National Research Foundation of Korea (2011-0009627).

3Z/12
Was problem based learning exposed in the 1st and 2nd year curriculum helpful for the clerkship in the 3rd and 4th year at Inha University School of Medicine in Korea?

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Background: At Inha University School of Medicine, Korea, PBL is a part of an integrated curriculum using a system based approach in the 1st and 2nd year with non-clinical materials delivered in the context of clinical practice. The main curriculum for the 3rd and 4th year is the clerkship. Our purpose of this study is to evaluate the effect of PBL's advantage on the clerkship.

Summary of work: In February 2012, the advantages of PBL in each process were asked on a questionnaire to 45 - 4th year students of Inha University School of Medicine, who finished all medical curriculums including the clerkship. Each process included finding problems, generating a hypothesis, verifying the hypothesis, independent learning, communication skills, sharing information, and teamwork.

We asked whether each PBL process was helpful for the clerkship on a 5-point Likert scale (extremely 5, very 4, moderately 3, slight 2, not at all 1).

Summary of results: All students answered the questionnaire. The order of assistance of each PBL process was as follows: independent learning (4.00), finding problems (3.96), verifying the hypothesis (3.93), sharing information (3.87), making the hypothesis (3.80), communication skill (3.62), and teamwork (3.60).

Conclusions: Even though all the processes of PBL were helpful, there were some differences within each process. Independent learning is the most helpful, but communication skills and teamwork are less helpful.

Take-home messages: PBL is a very helpful method to the clinical part of curriculum.

3Z/13
Evaluation of educational outcomes of problem based learning in a hybrid curriculum

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Background: Problem-based learning (PBL) is a vital component of the medical undergraduate hybrid curriculum at the Melaka Manipal Medical College, Manipal University, India.

Summary of work: The main objective of this study was to evaluate the educational outcomes of problem-based learning. Medical students in four cohorts were requested to participate in the study by completing an evaluation questionnaire. Qualitative data was collected to support quantitative data. It was a cross-sectional study and 464 students participated.

Summary of results: Analysis of student responses showed that problem-based learning at the institution improved students' acquisition of knowledge, generic skills and attitudes and showed a positive correlation (0.451-0.72) between scores in all the three domains. Qualitative analysis of student responses indicated that PBL, as a small group learning strategy, provided them a favorable and safer environment to develop necessary skills and attitudes.

Conclusions: The study helped us gain some insights that may be of use to others attempting to implement problem-based learning in a hybrid curriculum.

Take-home messages: Problem Based Learning has been perceived by students as a strategy for gaining knowledge, acquiring generic skills and developing favorable attitudes.

3AA Posters: The Student in Difficulty

3AA/1
Psychiatric illnesses among fourth-year to sixth-year medical students in Saraburi hospital medical center between 2007 to 2011

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Background: Medical students are at higher risk of psychiatric disorders comparing with the normal population.
Summary of work: Psychiatric records of medical students who had been treated by psychiatrists in Saraburi hospital were reviewed from january 2007 to december 2011. Included in those records were history, mental status examination, diagnoses using DSM IV-TR criteria and their management. Statistical data were presented in percentage and numbers.
Summary of results: There were 24 [15.58%] out of total of 154 medical students who were treated by psychiatrists. Three most common diagnoses were adjustment disorder; 16 cases[10.39%], major depressive disorder; 7cases[4.54%], psychological factors affecting medical condition; 3 cases [1.94 %]. Other diagnoses were obsessive compulsive disorder, gender identity disorder and bipolar I disorder, each was only with 1 case.
Conclusions: Psychiatric illnesses are common among medical students with five-year incidence 15.58 percent. Adjustment disorder and major depressive disorder are most frequent diagnoses. Counseling by medical teachers in mentor system is extremely necessary for screening, early management of psychiatric problems and refer to psychiatrists when indicated. Furthermore, student and peer support system is also very important to help reduce the mental problems.
Take-home messages: Psychiatric illnesses are common among medical students, mentor system is necessary for screening, management, and referring to psychiatrists when indicated.

3AA/2
Are Medical Students Exhausted? The Sleep Habits of Students at One United Kingdom Medical School

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Background: Sleep quality is an important predictor of students' exam success and doctors' error rates. We hypothesised that sleep quality would decline as students were exposed to the demands of medical school.

Summary of work: An anonymous questionnaire, based on the Pittsburgh Sleep Quality Index (PSQI), was given to students in all years. A PSQI score of greater than 5 indicates poor sleep quality.
Summary of results: 610 students completed the survey. Mean age was 21.5 (SD 2.8, range 17-33). 332 (56.5%) respondents were female. Students slept for a mean of 7.1 hours (SD 1.0), with second year students sleeping the least (6.6 hours, SD 1.0). 34.1% of students had a PSQI score greater than 5.
Conclusions: Conclusion/take-home message: Contrary to our expectations, medical students slept for as long as their peers in the UK. Unfortunately, no sleep quality data from the UK is available for comparison. Our results suggest that most students sleep well: however, a third report poor sleep quality and the characteristics of this group will be discussed at the presentation.

3AA/3
Comparison of factors causing pre exam anxiety and insomnia in medical, dental and pharmacy students

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Background: Anxiety and insomnia are two important factors which can make the students lose concentration while undertaking exams. In this study we aimed to compare medical students' behavior to investigate the most important cause of anxiety and insomnia: exam stress itself, non-standardized exams and large amount of notes.
Summary of work: A cross sectional randomized study using structured self-administered questionnaire was carried out over four weeks in International Shiraz Medical University using sample size of 220 students. Survey questionnaire consisted of Visual Analogue Scale to measure exam anxiety and seventeen questions regarding insomnia, quantity of exam notes and examination system.
Summary of results: 18 subjects were excluded from the analysis. A total of 70 medical (mean age =19.92), 73 Dental (mean age =19.95) and 59 pharmacy (mean age =19.88) students filled in the questionnaire. The average maximum exam anxiety marked on questionnaire was 73±21, 68±29 and 81±16 for medical, dentistry and pharmacy students, respectively. Also, the results showed that 71% of medical, 57% of dentistry and 65% of pharmacy students had insomnia.
Conclusions: This study indicates higher level of insomnia in pharmacy students is due to exam anxiety while it's due to extensive non-studied course loads in medical students.
Take-home messages: Extensive course loads are inevitable in medical health sciences; therefore, it is crucial to plan anxiety and insomnia reduction techniques.

AMEE 2012

3AA/4
Stress in Pakistani Medical Students

Rafeh Saeed (*KEMU, Student Council / SPWS-5th Year Student, Lahore, Pakistan*)

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Background: Mental health of future physicians has been vastly emphasized globally and locally during 1st decade of 21st century. The increasing tendency of suicidal attempts in Pakistani medical students has further signified the issue of their mental well being. Rapidly changing healthcare & innovations in medical education has further enhanced people's expectations from young doctors. Under these circumstances, the mental health of future doctors is at stake and needs to be evaluated.

Summary of work: A cross-sectional study was designed to explore stress in Pakistani Medical students. The current report is a part of bigger national project, conducted at King Edward Medical University (KEMU) Lahore. A mix method approach with a quantitative focus was adopted by using a prevalidated 22-point stress questionnaire administered to 240 (conveniently sampled) undergraduate medical students of KEMU. All voluntary participants signed a written consent and study was approved by IRB of KEMU. Eleven randomly selected voluntary participants were indepth interviewed for qualitative data analysis.

Summary of results: Qualitative data will be analyzed for descriptive statistics. Regression analysis will be done for correlation of different stress factors. Thematic analysis of qualitative data will be done & presented at AMEE.

Conclusions: Future physicians must be evaluated for mental health.

Take-home messages: Doctors do need a good mental health; a pre-requisite for any kind of health.

3AA/5
Stress among teammates during patient crises: Effect of role and repeated exposure

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Background: Previous research has shown significant variation in individual responses to potentially stressful situations. We examined the effect of role and repeated exposure on the stress responses of individuals in hierarchical teams managing simulated patient medical crises.

Summary of work: 22 dental dyads (one dentist, one dental assistant) participated in four simulated emergencies. Individual pre- and post-scenario subjective stress measures included anxiety (State Anxiety Inventory) and cognitive appraisal (ratio of perceived demands to resources; >1 = threat appraisal.

Summary of results: All four scenarios were perceived as highly realistic (mean 8.9/10, SEM .15) and moderately difficult (mean 6.8/10, SEM .30). Although dentists were team leaders, they perceived the scenarios as equally anxiety-provoking and threatening as dental assistants (mean post-scenario anxiety: dentist 47.9, dental assistant 43.1 p=.81; mean post-scenario cognitive appraisal: dentist 1.98, dental assistant 1.4, p=.10). Repeated exposure to the simulated emergencies had no effect on stress levels.

Conclusions: Assuming a leadership role in a hierarchical team does not appear to be associated with greater stress responses. The lack of scenario order effects suggests that levels of stress experienced were content-dependent rather than due to habituation.

Take-home messages: Neither role nor repeated exposure had an effect on the experience of subjective stress.

3AA/6
Increasing student stress negatively impacts team cohesiveness in gross anatomy

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Background: Teamwork is an important competency in medical education. Mayo Medical School's gross anatomy course incorporates team-based learning design. Teams share responsibility for meeting outcomes through daily dissection, quizzes and clinically based projects. The challenging 7 week course may predispose students to increased stress thereby affecting team cohesiveness.

Summary of work: Relationship between perceived stress and team cohesion was explored. Voluntary surveys identified baseline stress and team cohesion prior to course and were used to reassess students at timed intervals. Students reflected on stress level and perception of group's ability to work together during the previous week.

Summary of results: Response rates of 86% and 75% were recorded for week 1 and 6 respectively. A 44% increase in perceived stress levels (12.66 to 18.28) by week 6 was observed. Inverse correlation was seen between perceived stress and team cohesion increasing from R2=0.14 to 0.33.

Conclusions: Ability to work in interdisciplinary teams is a required skill for Mayo medical students. Understanding impact of stress on team cohesion may aid in developing strategies for students to recognize and cope with personal stress before team cohesion is affected. Data suggests inverse relationship between stress and team cohesion.

Take-home messages: Group cohesiveness and functionality may be negatively affected by high levels of personal stress.

3AA/7
The Effects of Short Palliative Course in Prevention of Burnout among Medical Students

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Pei-Yi Lee (*National Normal University, Department of Educational Psychology, Taipei, Taiwan*)

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Background: The preventive effects of a three-hours' palliative course for the burnout of medical students was evaluated by the MBI-HSS Score proposed by the Maslach et al. The test has three subtests: exhaustion, depersonalization and diminished personal accomplishment.
Summary of work: The intervention parament was a three-time course of lecture and discussion given in four weeks among the 6th grade medical students: one hour with the topic of introduction, one hour of legal aspects, and one hour of ethic consideration in palliative medicine.
Summary of results: The forty-six treated group did have a significant lower score than the sixty-four controls (57±9 vs 60±10.1). there was no difference between two group in the subtest score of depersonization (14±2.3 vs 14±2.7). There were tendencies of improvement in the other two subtest scores (exhaustion, 22±4.3 vs 23± 4.3; low personal accomplishment, 21±3.9 vs 22±4.4).
Conclusions: Only a 3-hours' course of hospice may help to prevent the chance of burnout in the medical students.
Take-home messages: To include the teaching of palliative medicine in the curriculum during rotation of medical students is highly suggested.

3AA/8
Burnout, focus group and academic performance (B, FG, AP)

Elsie Cázares-Guerra (*UANL, Psychiatry, Monterrey NL, Mexico*)

(*Presenter:* __Adelina Alcorta-Garza__, UANL, Psychiatry, Palo Blanco 604, Valle de Santa Engracia, San Pedro Garza García NL 66260, Mexico, adalcorta@hotmail.com)

Background: Medicine students suffer health problems like burnout. Faculty must to help them and look for support programs to increase wellness through their school.
Summary of work: Comparative study, before and after, to determine the impact of focus group on the academic performance of students. With permission from the authorities and students, answered questionnaires: general information, habits, work, their symptom profile GHQ-28 (Goldberg), MBI (Maslash Burnout Inventory) for overall health status and burnout at the beginning and end of therapy. 18 of the 26 subjects (5 men and 13 women) of 18 to 23 years of age (mean, 20.83), first through sixth grades in medical school completed the study.
Summary of results: We find statistical significance in the difference in symptom profile and emotional stress, and by the hours of study per week, before and after the therapy. There was a significant negative correlation of working hours outside the school with the AP.
Conclusions: The overall averages of the subjects did not change significantly after the FG, but FG helps for wellness.
Take-home messages: In spite of limitations of this study, it´s a moral issue give therapy to help our students in order to help them and medicine school to impact performance efficiency terminal at school.

3AA/9
Personality and Burnout syndrome (BS)

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Background: Performance will be excellent if we can reduce the students' BS. Some characteristics of personality are more likely to develop the syndrome.
Summary of work: We invite a stratified sampling the population of the Faculty of Medicine (n = 4470), n = 293 students who answered the Maslach Burnout Inventory and Zuckerman Personality Questionnaire.
Summary of results: BS prevalence was 21.5%; there was a significant linear association ($p = 0.05$) between the dimension of personal accomplishment with academic perception. Personality style: was a significant concordance between the BS with neuroticism ($r = 0.521$ $p = <0.01$].
Conclusions: Quality anxious (N-Anx), a tendency to poor planning and a taste for adventure (ImpSS) are more likely to develop SB. Personality Characteristics that protect against development of SB was dimension of activity.
Take-home messages: Implications useful of this work are to take awareness and encourage the development of strategies to help students.

3AA/10
Harassment and Discrimination in Medical Training: A Systematic Review and Meta-analysis

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Background: Harassment and discrimination can be defined as a wide range of behaviors that are perceived by medical trainees as being humiliating, hostile, or abusive. Examining the prevalence, sources, and risk factors of harassment and discrimination is a necessary first-step in developing strategies for prevention.

Summary of work: We systematically reviewed studies reporting prevalence, risk factors, and sources of harassment and discrimination of medical trainees. Studies were identified through searching electronic-databases (e.g., MEDLINE), scanning reference lists of relevant studies, and contacting experts. Two independent reviewers screened literature results, abstracted data and appraised study quality. Random effects meta-analysis was conducted using SAS.

Summary of results: Fifty-nine studies involving more than 38,353 trainees were included after screening 2160 citations and 177 full-text articles. Fifty-seven of these articles described cross-sectional studies and 2 described cohort studies. Meta-analysis of 51 studies demonstrated that 59.4% of medical trainees had experienced at least one form of harassment or discrimination during medical training (95% confidence interval [CI]: 52-66.7%). Consultants were cited as the most common source of harassment and discrimination (34.38%).

Conclusions: A high prevalence of harassment and discrimination of medical trainees was observed. More emphasis should be placed on identifying effective strategies to prevent these behaviors.

Take-home messages: "A friendly working environment is a productive one".

3AA/11
First do no harm - conceptualising medical student mistreatment in one UK medical school

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Background: Mistreatment of students is an ongoing problem in medical education which can affect student health and patient care. In this preliminary study we aimed to clarify the concept of mistreatment as it applied to one UK medical school.

Summary of work: We conceptualised mistreatment using a review of the literature, a series of semi-structured focus groups and individual in-depth interviews with first year clinical medical students. Data were used to identify dimensions and sub-dimensions of mistreatment.

Summary of results: Issues of neglect, strategic acceptance of teachers who mistreat and suppression of students' own moral and ethical values to prevent actual or perceived punishment were highlighted frequently, as well as the lack of effective preventive methods. Students often labelled

forms of mistreatment as motivating as well as commenting on a vast amount of positive experiences within medical education. Based on this preliminary work, we are conducting further research incorporating faculty with a view to implementing effective policy.

Conclusions: Mistreatment is a diverse and complex concept structurally and culturally inherent to medical education.

Take-home messages: Medical educators and clinicians need to acknowledge the persistence of medical student mistreatment. Only a continuing confrontation of this problem may affect the necessary cultural changes.

3AA/12
Study of mistreatment with medical students in the clinical setting

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Background: Studies indicated that medical student abuse is likely to have a considerable negative effect. Compared with non abused students, abused students reported more anxiety, depression, difficulty with learning, thoughts of dropping out, and problem alcohol use. Other studies showed that stress associated with being abused impacted negatively on career decisions.

Summary of work: This research was a cross sectional study carried out by Educational Development Office in the medical school, Kerman, Iran. All medical students in clinical phase were selected through census method. Students' viewpoint towards treatment with them in clinical setting evaluated using a questionnaire. The validity of the questionnaire confirmed by a number of experts and its reliability determined using Alfa Cronbach 0.6.

Summary of results: 0ne hundred sixty eight questionnaires were completed. Medical student abuse was reported by 93% of the respondents. Verbal abuse was the most frequently experienced abuse followed by academic abuse, gender discrimination, physical abuse and sexual harassment. Residents were most often reported as abusers except in physical abuses. The most frequent emotional response to abuse was sadness (97%).

Conclusions: Experience of abuse in clinical setting is common among medical students.

Take-home messages: To improve the learning environment, medical educators need to take action to resolve this serious issue

3AA/13
Remedial program for clinical performances: one chief resident's serial tutoring was better than many professors' tutoring

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Background: Even though poor performance on clinical performance examination requires remediation, little is known about how to remedy skill deficits. In this study, the authors describe and examine the effectiveness of a remediation program.
Summary of work: After two sessions of clinical performance examination, 23 students were found to require remediation. The department of internal medicine (IM) and the department of family medicine (FM) worked on the program. The 6weeks of remediation program was divided into two parts; 3weeks in IM and 3weeks in FM. While the department of IM offered classes of professors, the department of FM offered classes controlled by one chief resident. After a remediation program, clinical performances were re-examined. Changes in clinical performance scores were analyzed and student feedback after the program was documented.
Summary of results: Twenty-three fourth-year students participated in the remediation program. After the remediation program, the students' scores in total, history taking, physical examination, physician's manner and physician-patient interactions sections were significantly improved in the re-examination. Most students found that the remediation program was instructive and they were more satisfied with one chief resident's serial tutoring in FM rather than various professors' tutoring in IM.
Conclusions: The remediation program was found to be useful for improving specific clinical skills. And overall tutoring by chief resident was more satisfactory than by tutoring by specialist of each section.
Take-home messages: The remediation program could help students with poor performance and resident could be a better tutor than professor.

3AA/14
A new preclinical-year revision course designed and taught by clinical-year students: Analysis of attending tutees' perceived confidence in the teaching, the clinical topics, and the impact of frequency of voluntary attendance and measurable performance

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Background: The General Medical Council (GMC) emphasises the importance of teaching-skil for graduating doctors. This can be near-peer assisted learning. We report the development and impact of an extensive near-peer teaching project
Summary of work: To evaluate the impact that extensive near-peer revision class delivery had on the confidence perception of junior medical students in the clinical topics, explore the characteristics of attendees and investigate relationships between tutees' voluntary attendance at multiple sessions and end of year exam performance. The course was designed/delivered by three medical students, and comprised 28 classes (76 hours) of Year 1-2 preclinical topics. Tutees completed evaluations before and after sessions. Questions included demographics, pre and post self-rating of confidence in the topic and teacher type preferences. A quantitative analysis will take place 02-2012 employing statistical tests to establish relationships between frequency of voluntary attendance and measurable performance, by subject and overall (quartile) ranking.
Summary of results: 2656 evaluations were returned. All sessions showed significant increase in confidence ratings, with an average of 61.24 (p<0.01). Attendees felt near-peers were better placed than peers or academics to deliver. The end of year exam score analysis has been approved and analysis by senior staff is underway (results for AMEE).

3AA/15
A comparative OSCE between Internship students and a group taking a remedial course at UNAM Faculty of Medicine in Mexico

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Background: Internship is the 5th year of the medical career; these students (MIP) develop clinical competence and have more responsibility with patients. At the end of the year they take an end-of-career summative exam with theoretical and practical components (written MCQ test and OSCE). Failed students may take a remedial course (PRAyT) and can retake the exam six months later.

Summary of work: We applied a 17 stations' OSCE to the two groups (MIP) and (PRAyT) after 4 months of the beginning of Internship and the remedial course. 33 MIP were selected randomly and the total PRAyT group (37) was tested.

Summary of results: MIP average score was 5.32+0.5 and PRAyT was 6.45+0.5 (p=0.0007); Cronbach´s alpha was 0.65 in MIP and 0.59 in PRAyT. In the analysis by station the PRAyT group had higher scores in 9 stations (p<0.0001).

Conclusions: The students in the PRAyT group had a higher level of clinical competence than the MIP group, probably due to greater clinical experience and also more experience in OSCE formative testing

Take-home messages: The remedial course increases students' academic success, it is recommended that it is continued and improved.

3BB Posters: Clinical Assessment

3BB/1
Comparison of Different Measurement Scales to Assess Humanistic Skills Among Medical Students

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Background: Humanism is essential for physician's expertise. Method of assessing humanism among first year medical students (OMSI) is not widely studied. This study compares effectiveness of different humanism scales.

Summary of work: Humanism, performance, and Standardized Patient's (SP) satisfaction among OMSI were assessed by multiple choices Medical Knowledge Exam (MKE). Standardized Patient (SP) evaluation measured in check boxes (CBX) and Likert scales (LKS). Humanistic skills are interviewing, Listening, Counseling, Rapport, Personal manners.

Summary of results: Overall performance using MKE is 82.6%, LKS is 75.7%, and CBX is 87.1% on average. There are significant associations between CBX and LKS in performance (r=0.74, p<0.0001) and in the five humanistic skills (r=0.54, 0.61, 0.68, 0.64, and 0.66, p<0.0001) respectively. No associations between CBX and MKE and between LKS and MKE in all factors. SP satisfaction are associated with the LKS and CBX for all 5 categories (p<0.0001).

Conclusions: MKE does not reflect a student's ability to perform well in humanism compared to CBX and LKS. MKE is not an effective tool to evaluate humanistic skills. LKS and CBX are equally effective.

Take-home messages: High grades in MKE do not reflect high scores in the humanism. MKE is not an efficient tool to evaluate humanism. LKS or BXS are efficient to assess humanism.

3BB/2
Comparison of a 3-point versus a binary checklist for assessment of procedural skills

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Background: The value of a 3-point over a binary checklist for the assessment of procedural skills is unknown. We compared these two checklists for the assessment of three procedures.

Summary of work: Video performances of arterial blood gas (ABG; n=28), lumbar puncture (LP; n=30), and paracentesis (n=35) on simulators were evaluated by two trained raters using checklists, analyzed as a 2-point binary and a 3-point scale. The sensitivity and specificity based on a minimum performance level (Angoff method) were compared to a dichotomous global measure of competence.

Summary of results: The area under the curve (AUC) of the receiver operating characteristic curve for the binary and 3-point checklists were 0.92 vs. 0.93 for ABG, 0.92 vs. 0.91 for LP, and 0.82 vs. 0.82 for paracentesis, respectively. The specificity of the binary checklist vs. the 3-point checklist for ABG, LP, and paracentesis were 61.5% vs. 46.2%, 33.3% vs. 20.8%, and 42.9% vs. 28.6%, respectively. Sensitivity was 100% for all procedures and checklists.

Conclusions: In all three procedures, both the binary and 3-point checklists demonstrated comparable sensitivity and AUC. The binary checklists demonstrated higher specificity than the 3-point checklists.

Take-home messages: For assessment of procedural skills, a binary scale may be preferred over a 3-point scale for maximizing specificity.

3BB/3
Are radiologic diagnostic skills different in Primary Care Physicians using film or screen X- rays? The validation of a standardized test on radiological diagnostic skills

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Background: There is scarce evidence on the radiologic diagnostic performance of Primary Care Physicians (PCP) using plain X- rays displayed on film or on screen.

Summary of work: We designed a study for the validation of a standardized test to assess the radiologic diagnostic skills using film or screen X- ray. We include 10 Family Medicine Residents (FMR), 10 Specialists in Family Medicine (SFM) and 16 Radiology Residents (RR) as extreme group. A 7 real- case test including a vignette and an X- ray was designed. Cases were selected by their frequency in Primary care. A panel of 3 radiology experts (gold standard) agreed on the key sign for the interpretation of the X- ray and secondary signs. For each case, participants were tested with either radiologic method on the 7 cases in 2 different occasions. For each case, a pass/ fail standard (the recognition of the key sign) was defined and scores were calculated by giving different weights to the key and secondary signs (total 10 points). A global kappa coefficient was calculated for each group.

Summary of results: Mean scores were: FMR 4.15 (film) and 4.1 (screen); SFM 4,2 (film) and 3,77 (screen); RR 7.03 (film) and 7.04 (screen) (p< 0.000). Global Chronbach´s alpha was 0.84.

Global Kappa coefficients between film and screen X- rays were: FMR 0,48; SFM 0,48 and RR 0,58.

Conclusions: Non significant differences on radiological diagnostic performance in PCP between the two methods were found. The test is valid and reliably.

3BB/4
Video evaluation and feedback of medical students' hand hygiene skill

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Background: Hand hygiene technique is part of the 1st year medical course program of the LaC - Clinical Skills Lab from the Faculty of Health Science, University of Beira Interior (FCS-UBI), Portugal.

Summary of work: All first year students were enrolled to hand hygiene session. Until 2011, every student was evaluated by a faculty member on site. This year, a clinical skills education and simulation center management tool will be used to evaluate students without the presence of a faculty member on site. It´s based on video recording and computer based evaluation, with video feedback of the student performance.

Summary of results: Evaluation using this method is scheduled for the last week of March, 2012.

Conclusions: The increasingly number of medical students, lack of faculty and time, made necessary the development of new strategies for the evaluation of clinical skills. The use of video recording should permit the maintenance of individual

performance evaluation and enhance constructive feedback, also helping learners to develop the capacity to reflect their own performance.

Take-home messages: Video recording maybe useful to evaluate clinical skills and may also be a good feedback method.

3BB/5
Assessing our assessments: A sociolinguistic investigation into the cultural and communicative issues in a General Practitioner licensing exam

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Background: Statistical studies are good at highlighting diversity issues for the Royal College of General Practitioners'(RCGP) membership exam, but not in explaining these. The RCGP and experts in sociolinguistics at King's College London have therefore made a unique study of the 'Clinical Skills Assessment'(CSA), an examination of GPs' through simulated consultations. Using advances in video technologies from linguistics, this project provides an innovative analysis of the communicative requirements of the exam.

Summary of work: Video recordings from 200 CSA candidates' have been collected in a manner approved by the RCGP and King's College London ethics committee. Currently a sample of 40 videos, representative of good and poor performances across the candidate demographic, has been closely transcribed and analysed.

Summary of results: The analysis falls under a qualitative paradigm, using frameworks from sociolinguistics to initially map and compare the pacing and communicative structuring of the 40 consultations. This mapping has allowed key moments or difficulties to be identified and analysed at the micro level, classifying the involvement strategies for rapport and mutual understanding used successfully or unsuccessfully between candidates.

Conclusions: The study demonstrates specific communicative requirements of pacing and rapport management required in CSA simulated consultations, which can further inform training and assessment guidelines for addressing pass rate discrepancies.

3BB/6
Are there automated systems for individualized personal feedback after OSCE?

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Background: At our medical school, an OSCE was introduced at the end of the clerkship-year (6th year) in 2008. In recent years, we noticed an increasing demand for feedback on assessments from students. Until now, feedback on the OSCE is only provided, besides the right for perusal for all exams, by communicating the results. Based on literature, providing feedback is considered as the most important feature of simulation-based medical education. We aim to develop a program, generating automatically feedback to every student in a competency – based framework starting from the results from the OSCE. For this project we searched the literature to find similar programs.

Summary of work: The search covered three literature databases (ERIC, Medline and Web of Science), employed 15 single search terms and retrieved two relevant articles. Each article describes an assessment tool generating automated formative feedback starting from checklists. Both systems give automated station-specific feedback to the student.

Summary of results: Both assessment systems give quick, automated and highly elaborate personal feedback. However, feedback is not linked to a competency-based framework.

Conclusions: Computerized clinical assessment systems can be used for generating personal feedback to students after the OSCE.

Take-home messages: Automated systems for feedback after OSCE exist but there's room for improvement.

3BB/7
Nurses' attitude on assessing physicians' interpersonal and communication skills

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Background: Nurses are physicians' closest colleagues and have the opportunity to observe residents' behaviors which are unable to be observed by their supervisors. This study is a preliminary exploration of nurses' perspectives towards assessment of residents' interpersonal and communication skills.

Summary of work: A purposive sample of 36 nurses from the department of family medicine in two medical centers was recruited in this questionnaire survey. The questionnaire has three domains including attitude of evaluation (6 items), self-competence of evaluation (4 items) and expected outcomes and benefits (5 items) answered with a 5-point Likert-type scale.

Summary of results: Most nurses (91.7%) held a positive attitude to assess residents' interpersonal and communication skills and also confident to make assessments. However, many (47.2%) nurses doubted the outcomes and benefits of such evaluation and thought that the physician's interpersonal and communication skills are difficult to change. Correlation analysis showed no difference in nurses' attitude toward such assessment in different medical institutions, and in medical ward or outpatient clinic. The only difference was that the senior nurses held more positive attitude than juniors.

Conclusions: Nurses are willing and have self-confidence to assess residents' communication skills but doubt about the effect of the assessment.

Take-home messages: Nurses are able to assess residents' interpersonal and communication skills but doubt about the effect of the assessment.

3BB/8
The correlation between category and global score in the oral assessment of emergency department resident clinical competencies

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Background: Category score reflects the performance in different dimensions. Global score reflects the overall performance. These two scoring methods were adopted in the oral assessment of clinical competencies of emergency department (ED) residents. The correlation between the scores was evaluated.

Summary of work: Thirty-three ED residents were enrolled. Five scenarios (snake bite, endotracheal tube intubation, in hospital cardiac arrest, intussusception, and food poisoning) which focused on 5 clinical competencies (medical knowledge, practice-based learning, interpersonal and communication skill, patient care, and system based practice) were adopted for oral assessment. The performance of residents was evaluated by a senior attending physician of ED and recorded in category and global scores in each scenario. The category score was constructed of 10 key dimensions. Each dimension was evaluated by a score range from 1 to 5. The global score ranged from 1 to 10 which represented the overall performance. Pearson correlation coefficient was adopted to evaluate the correlation between these 2 scores.

Summary of results: The Pearson correlation coefficients of each scenario were 0.82, 0.90, 0.90, 0.81, and 0.94.

Conclusions: These two scoring methods were highly correlated and reach good consistency.

Take-home messages: The category score can be transformed to represent the overall performance in the oral assessment of ED residents.

3CC e-Posters: International Medical Education

3CC/1
Selection of international medical graduates into Canadian postgraduate residency training: factors associated with matching

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Background: Historically, Canada has been dependent on doctors with medical degrees from outside Canada for health human resource planning (20 - 30% of practicing physicians in Canada have obtained their medical degree abroad). Since 2007, the Canadian Resident Matching Service (CaRMS) is the major gateway towards becoming a practicing physician in Canada through postgraduate medical training positions.
Summary of work: The objective of this study is to explore the historical residency matching data to determine what factors are related to the matching success of IMGs into residency positions in Canada. Using CaRMS' extensive database, this study looks at the relationship between applicant characteristics (demographics, examination scores, previous practice experience, country of degree, etc.) and matching success.
Summary of results: Through the analysis of factors and their association with matching success, we gain a better understanding of how factors are weighted in the selection process.
Take-home messages: Canadian postgraduate training is an important, and often the only option for IMGs towards becoming a practicing physician in Canada. As the number of IMGs applying for postgraduate residency training continues to increase, it is of interest to applicants and the medical education community to know what factors are related to matching success.

3CC/2
Medical education in Afghanistan

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Background: Medical education in Afghanistan has been severely damaged during 23 years of conflict. School facilities were destroyed, many teachers escaped from violence into other countries, and other teachers who remained had to work with few teaching materials and in isolation from academic communities. After the fall of Taliban regime in 2001, Afghan medical schools began to take steps for comprehensive reconstruction.
Summary of work: The University of Tokyo ran a medical education project in Afghanistan from 2005 to 2008 and subsequently accepted Afghan medical teachers on training courses from 2009 to 2012. The aim of the project was to support strategic changes of medical schools, taking the long view of shifting from teacher-centred education to student-centred one. This work was made possible under support of Japan International Cooperation Agency.

Summary of results: The project implemented problem-based learning courses for preclinical students and adopted case-based learning method for clinical students in Kabul Medical University. More than a hundred Afghan teachers attended training programmes in Tokyo.
Conclusions: Changes brought into medical schools were generally welcomed by teachers and students. Some issues still remained, such as communication gap between the responsible two ministries of higher education and public health.
Take-home messages: Afghan medical schools are eager to reach global trends in medical education.

3CC/3
Evaluation of the effectiveness of International Exchange Student Programme based Interprofessional Learning

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Background: In Japan, a variety of interprofessional education programmes exist. However, due to different curricula across universities, little collaboration exists between universities. Tokyo Metropolitan University has undertaken international exchange programmes with three universities in the UK, sending in total 48 students.
Summary of work: The aim was twofold: widen students' perspective on IPE and to develop the understanding of how IPE could be delivered. The evaluation was undertaken using a questionnaire, investigating the characteristics across the participating universities.
Summary of results: The common effect among all students were (1) 98% of students engaged actively in self-reflection and realized own strengths and weaknesses, (2) 80% recognized the cultural difference between Japan and the UK; (3) 85% became aware of the international difference within professional training. The most difficult issue for students was verbal communication; however, the severity depended on each student's English ability. Students recognized the difference between delivery of IPE in the UK and Japan, with an ability to recognize the shortcomings currently existing in Japan.
Conclusions: The international exchange leveraged both expected and unexpected outcomes. Besides the range of reflective skills students gained, their ability to contribute to the design of IPE in Japan was an added advantage.
Take-home messages: Students recognized the difference between delivery of IPE in the UK and Japan, with an ability to recognize the shortcomings currently existing in Japan.

3CC/4

Promoting Personal and Professional Growth – The Role of Reflection and Scholarship in Global Health Experiences for Pre-Clinical Medical Students

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Background: Service Learning (SL) concepts promote personal and professional development during experiential learning. Glassick's scholarship criteria are helpful for focusing student global health (GH) projects. Starting in 2011, these two frameworks were incorporated into guidelines for students' post-trip reports to promote personal and professional development.
Summary of work: Objective: 1) Standardize post-trip write-up guidelines by incorporating SL and Glassick's scholarship frameworks; 2) Identify emerging themes elicited by the new guidelines.
Methods: The authors reviewed SL and scholarship literature to draft guidelines for post-trip reports, which was reviewed and approved by the GH Committee. The guidelines were introduced to students during the Global Service Preparation course two months prior to their trips. The authors collected post-trip summaries, removed names, reviewed them for emerging themes using Grounded Theory.
Summary of results: Twenty-four students submitted reports. Experiences include clinical observership, basic-science and translational research in 12 countries. Emerging themes include wide range of medical conditions seen, impact of psychosocial factors on illness, clinical and research skills acquired, challenges encountered, impact on future careers, and advice for future students. Areas requiring further investigations include pain control, cross-cultural communication, patient-centered care, interprofessional collaboration.
Conclusions: Guidelines improved quality of post-trip summaries. Emerging themes also identified areas for future research.
Take-home messages: Student feedback is helpful in enhancing existing global health course.

3CC/5

A Framework for the Integration of Global Health Educational Activities

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Background: Many medical faculties and clinical departments engage in global health activities. The term "global health activities" encompasses a wide set of endeavors, learners and participants. Using a framework for the categorization of global health educational activities enables their articulation around a unifying mission. It creates a coherent approach that can capitalize on synergies between various activities and helps outline steps to fulfill our commitment to social accountability.
Summary of work: We developed an integrative framework for the categorization of global health educational activities within our program according to the types and levels of learners and the location of the activities.
Summary of results: The framework highlights gaps, links and potential synergies between activities; priorities for the investment of resources; and opportunities to focus future activities on specific groups of learners both in Canada and abroad.
Conclusions: The development of a unifying framework to categorize our global health activities has highlighted our foci of activities and clarified how they relate to each other, how they align with our vision, mission and values, and where we should concentrate resources to meet our commitment to social responsibility.
Take-home messages: The use of an integrative framework to categorize global health educational activities can enhance coherence and help achieve a program's mission.

3CC/6

International variation in performance by basic science discipline on USMLE Step 1

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Background: This study investigated country-to-country variation in performance across basic science disciplines for examinees taking USMLE Step 1 for the first time from mid-2008 through mid-2011.
Summary of work: Percent-correct discipline subscores for 101,000+ examinees taking Step 1 for the first time between June 2008 and May 2011 were retrieved for analysis. For each examinee/subscore, we computed the difference between the subscore and mean performance of examinees at US/Canadian schools and tabulated mean differences by country of medical school; depending upon the subscore, 500-3000 unique items contributed to calculation of mean differences.

Summary of results: Controlling for overall performance, international medical students/graduates (IMGs) performed best in Gross Anatomy/Embryology (+2.1%) and Pathology (+1.8%) and worst in Behavioral Sciences (-3.0%) and Genetics (-2.1%) relative to examinees from US/Canadian schools. Middle Eastern and Asian IMGs showed this pattern more strongly; it was typically present to a lesser degree for European IMGs and mostly absent for Caribbean IMGs. Several (English-speaking) countries had relatively higher performance in Gross Anatomy and Behavioral Sciences and lower performance in Genetics, Biochemistry, and Histology/Cell Biology.

Conclusions: Potential reasons for sizable country-to-country performance variation include differences in curricular focus and instructional methods, differences in culture and language of instruction, relative emphasis on preparing students to take USMLE, and other factors.

3CC/7
Climate change and sustainable health care: assessing students' interest

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Background: Core Global health teaching at King's College London School of Medicine comprises a number of strands, and in the penultimate year, students select two workshops from a choice of 6-8. They are required to write a 1000 essay on a global health topic of their choice.
Summary of work: These annonymised essays were analysed to explore how many students considered climate change and or sustainable health (CC&SH); the essence of their arguments; what evidence and resources were access and or critiqued; what relevance this had to them.
Summary of results: Approximately 100 students attended these workshops over two days. How many students referred to CC&SH will be presented as well as the findings from their essays. Preliminary data and data from the previous year, suggest a minority students are engaged and concerned, with some becoming active within the various climate change health groups.

Conclusions: There is an urgency to respond to CC & SH yet the process of defining learning outcomes, organising teaching and materials, as well as assessment has been challenging for those minority of schools that champion this. Sharing examples of curriculum developments will offer those with limited interest and expertise a way forward.
Take-home messages: CC & SH will have a significant impact on health care and students need to be prepared for this.

3CC/8
Creating culturally authentic films about health: challenges and best practices

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Background: Films about the impact of culture on health can be powerful tools in creating intercultural understanding of health behaviors and preferences.
Summary of work: As part of a yearlong health care redesign activity, four films were commissioned from screenwriters of diverse cultures in Hmong, Somali, African American and Latino communities in Minnesota, USA. The playwrights created theater pieces of 30 minutes in length, with very few characters, that described health issues of a family from their culture. The plays were performed by professional actors, in their native language, and filmed by public television. The four films that were produced became the basis for in-depth intercultural discussions by 100 participants in the care redesign educational activity.
Summary of results: During the creation, filming, production and discussions of the films, a set of best practices were identified. These practices include: setting expectations of writers, actors, producers and viewers, navigating multiple languages in a single film, estimating costs of complex productions, avoiding unanticipated stereotyping of cultures, and framing facilitated discussions to avoid misunderstandings of audience members.
Conclusions: The best practices provide guidance for institutions considering commissioning theater pieces that include diverse languages and cultures.
Take-home messages: Once filming has begun, it may be too late. Anticipate cultural preferences to avoid costly mistakes.

3CC/9
Developing critical cultural awareness in the intercultural language classroom for medical students

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Background: In the context of intercultural language education in medical contexts, the development of critical cultural awareness may usefully be directed towards means

of 'unpacking, examining and transforming assumptions' about the tenets of western biomedical professionalism, the core set of beliefs that global medical education tends to instil in medical students.

Summary of work: This study considers the role of critical cultural awareness in language education for medical students and investigates a group of Taiwanese medical students' development of critical cultural awareness through activities in the language classroom. By using an activity on birth and medicine, ethics and life, the study collects students' written data to analyze.

Summary of results: It is evident that an intercultural language classroom for students of medicine could include topics and texts that address aspects of healthcare practice or ethics and life, which prompts students to consider critically how the texts articulate social values, attitudes and beliefs, and how these, in turn, inform behaviour.

Conclusions: The study results show that students are able to address different cultural beliefs and the intercultural language classroom can at the same time compares learners' attitudes to general medical topics, across different countries.

Take-home messages: The intercultural language classroom can become a site for subjecting medical students' professional values to scrutiny through developing their critical cultural awareness.

3CC/10
A Cross-Cultural Study of Overseas Clinical Elective Students' Approaches to Professional Dilemmas: When in Rome, Do as the Romans Do?

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Background: Medical students worldwide engage in clinical electives overseas. However, no research has examined exchange students' responses to professional dilemmas. Prior studies reported how medical students approach professional challenges in their home countries and found some cultural differences between Western and Asian countries. This study explores how Western medical students consider cultural differences when facing professional dilemmas abroad.

Summary of work: We conducted semi-structured interviews with 20 western medical students visiting National Taiwan University for clinical electives. We inquired into reactions towards five standardized video clips depicting students facing professional dilemmas. We transcribed and analyzed the interviews according to theoretical framework of prior Canadian and Taiwanese studies.

Summary of results: Many participants articulated differences between Western and Taiwanese approaches to professional dilemmas, such as following seniors' advice. Nevertheless, the majority of students would react to the professional dilemmas the same way they would in their home countries. Only a few students would modify their responses according to the cultural norms in Taiwan.

Conclusions: The findings of this study calls for further cross-cultural research and curricula on medical professionalism.

Take-home messages: Medical educators must recognize students' reasoning towards professional dilemmas and guide overseas clinical elective students to consider different socio-cultural norms.

3CC/11
Analysis of medical elective reflection papers: a novel approach to cultural understanding

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Background: The elective is a component of many undergraduate medical curricula. Whether students choose to spend their elective period overseas, or closer to home, they are often exposed to different cultures and communities.

Summary of work: We have analyzed the reflective written papers of experiential learning by students returning from electives at our respective institutions in an attempt to discover what transcultural understanding has been gained, both personally and professionally.

Summary of results: Using qualitative methodologies for text analysis and a collaborative approach to identify lower order descriptive categories in reflective written reports, we have developed a model to describe transcultural understanding amongst students on completing their elective.

Conclusions: The development of culturally aware medical students will potentially lead to the effective practice of cultural medicine. Our methodology has helped us to better appreciate the transcultural understanding that our students gain from electives. In addition it has also given us a potentially powerful evaluation tool allowing us to better evaluate the effectiveness of our electives programmes.

Take-home messages: We believe that transcultural understanding should be a primary aim for medical electives that involve global health experiences either at the home institution or abroad. Such understanding can come from national or international experiences, but must involve cultural immersion.

3CC/12
Intercultural awareness in medical education - innovative preparatory course for Medicine students planning rotations abroad: intercultural communication and specific training in foreign language

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Background: The Medicine curriculum in Aachen defines four time slots for student mobility. 42% of each cohort completes at least one rotation or semester abroad during their Medical study. Considering the student mobility, the number of foreign patients in Germany and the lack of the intercultural aspects in education, drove the Deanery of Study Affairs and the Skillslab AIXTRA to establish an intercultural communication course.

Summary of work: We split the participants into three groups, according to the language of choice (French, English or Spanish). Combining different teaching methods, we approach different learning domains: role play with standardized native speaker patients, gathering and presenting information about the health system and medical education of each target country, peer coaching and theoretical input of intercultural communication dimensions.

Summary of results: Pre/post evaluation in self-perception indicates a significant improvement in many aspects. Furthermore, students rated the course as effective, recommendable and it fulfilled their expectations.

Conclusions: The course raises students' intercultural awareness, motivating them to further cognition on intercultural communication and increases their confidence in the interaction with patients abroad or in a foreign language.

Take-home messages: Intercultural awareness is an important aspect in the physician-patient communication; hence, it is to be considered throughout the stages of Medical education.

3CC/13

The HERMES (Harmonised Education in Respiratory Medicine for European Specialists) Initiative of the European Respiratory Society (ERS)

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Sharon Mitchell (*European Respiratory Society, Educational Activities, Lausanne, Switzerland*)

Julie-Lyn Noel (*European Respiratory Society, Educational Activities, Lausanne, Switzerland*)

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(*Presenter:* Gernot Rohde, European Respiratory Society; Maastricht University Medical Centre, Department of Respiratory Medicine, Maastricht, Netherlands*)

Background: The EU has affected an automatic recognition of diplomas and certificates of qualification in medicine in all member countries via two relevant directives (issued in 1975 and 2005). This is only acceptable on the basis of harmonised training standards across the entire European Union. The challenge of harmonising education in respiratory medicine for European specialists is addressed by the HERMES Initiative of the European Respiratory Society.

Summary of work: Since 2005, the ERS launched the first HERMES project with the aim of providing educational standards that would guide teachers and trainees.

Summary of results: Working with experts from all over Europe, consensus methods of facilitated group discussions, modified Delphi surveys, and plenary meetings were used to produce educational standards: syllabus, curriculum, European examination and accreditation of training centres for Adult Respiratory Medicine.

Conclusions: The principles, methodology, and development strategies have since then spread to other respiratory specialties and the initiative has grown with several projects across respiratory specialties: paediatric respiratory medicine, spirometry, respiratory sleep medicine, respiratory critical care, thoracic oncology and respiratory physiotherapy.

Take-home messages: The global HERMES initiative aspires to facilitate the mutual unrestricted acceptance and ratification of individual qualifications enabling free movement of specialists and ultimately, delivering the very best of care to those suffering respiratory disease.

3CC/14

European assessments: HERMES (Harmonised Education in Respiratory Medicine for European Specialists) Initiative of the European Respiratory Society (ERS)

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Background: The ERS provides formative and summative assessments with the European examinations taking place during the annual ERS congress, and in the Netherlands and Russia.

Summary of work: Knowledge-based assessments are run and taken voluntarily by already-qualified respiratory specialists where they receive a European Diploma if successful. It is an obligatory intraining assessment in the Netherlands and the knowledge part of the national exit examination of Switzerland.

Summary of results: More countries in Europe are expected to adopt the examination for their training, diplomas and certification.

Conclusions: The perceived value of the ERS examinations are based on its links to practice, educational benefit to its users and the attitude and rigour by which it is set up. The

examination content is blueprinted from the HERMES syllabi. Feedback and learning curves are provided to participants. They then have the opportunity to identify their learning needs and shape their learning strategy and priorities. Specialists use this examination for benchmarking purposes after years of clinical practice.

Although there are knowledge-based examinations only, new HERMES projects are investigating other practical assessments and e-portfolios.

Take-home messages: Consistent with the HERMES mission, the ERS assessments work towards providing harmonised training for respiratory specialties across the EU and recognition of diplomas and certificates of qualification.

3CC/15
Where there is no psychiatrist: teaching Psychiatry in Somaliland

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Background: My interest in medical education and mental health was enthused by an opportunity to teach psychiatry to final year medical students in Somaliland; a country where there are no psychiatrists.

Summary of work: I delivered and developed a teaching curriculum, of international standards to inform the future doctors of Somaliland of mental health, and encourage pursuit of a career in this field.

Summary of results: All students passed the course successfully, and many were keen to pursue a career in psychiatry by the end of the course. Further research was conducted as I collaborated with interns/junior doctors from Somaliland and mentored them, particularly helping develop their research and audit skills.

Conclusions: International teaching programmes can be extremely effective, and highlight a need for greater awareness of mental health problems, to help reduce and eliminate stigma. This was an amazing opportunity and experience given to me at an early stage in my career, which will help to inspire my further work in medical education, and set up new projects.

Take-home messages: The importance of sharing medical knowledge and teaching. The opportunities available are open to all, and should be taken my doctors interested in medical education at all stages of their training.

3CC/16
Peer-assisted learning - modernising medical education in the teaching of clinical skills

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Background: Peer-assisted learning (PAL) is increasingly becoming a force to be reckoned with in medical schools across the UK. In 2011 a partnership was established between

Cardiff University and Hawler Medical University (HMU), North Iraq to use peer-assisted learning to teach clinical skills and use this concept as a catalyst for educational change in Iraq.

Summary of work: The collaboration between Cardiff University and HMU enabled the Cardiff team to visit Iraq to teach medical students clinical skills and help them to become PAL Leaders. A new clinical skills facility was established in HMU as a result of the partnership and peer-assisted learning is being integrated into the medical curriculum at HMU for students to teach each other clinical skills through PAL.

Summary of results: The effectiveness of peer-assisted learning in Cardiff University and HMU is currently being evaluated and results will be presented at the conference.

Conclusions: Peer-assisted learning is a mutually beneficial scheme. The collaboration between both institutions has demonstrated the innovative nature of PAL and how PAL can enhance the student experience as well as lessen the burden on medical schools.

Take-home messages: Through friendship and collaborative work between institutions this concept of peer-assisted learning can be used to modernise medical education around the world.

Session 3DD: Posters (en français): Méthodes d'apprentissages

3DD/1
Vignettes cliniques vidéo, un outil pédagogique et d'évaluation de la psychiatrie (2009)

Caroline Dubertret (*DIU de pédagogie médicale, Université Rouen - Paris VII -Amiens-Caen–Lille, France*)

(*présentateur:* Caroline Dubertret, DIU de pédagogie médicale, Université Rouen - Paris VII -Amiens-Caen–Lille, France)

Contexte: La psychiatrie est souvent considérée comme un domaine qui possède son propre langage. L'étudiant doit enrichir son savoir et s'approprier le sens des définitions de symptômes en psychiatrie pour pouvoir ensuite les utiliser dans son raisonnement clinique et ses prises de décisions. Nous avons construit un outil pédagogique à partir d'une série de courtes vignettes cliniques vidéo d'entretiens psychiatriques cliniques afin d'évaluer la capacité des étudiants à utiliser des connaissances antérieures. Les objectifs étaient (1) d'évaluer le niveau initial des étudiants en médecine DCEM3, (2) de leur apprendre à identifier la sémiologie psychiatrique, (3) de les amener à construire un raisonnement clinique pour aboutir à un diagnostic clinique.

Résumé des travaux: Protocole pour les étudiants
21 étudiants en DCEM3 ont été évalués en deux temps en début puis en fin de stage, à l'aide des 12 vignettes cliniques vidéo sur les pathologies psychiatriques les plus courantes insérées dans un diaporama powerpoint.
.Nous avons aussi construit une échelle de 12 items afin de recueillir l'évaluation donnée par les étudiants de la qualité globale de l'enseignement par enregistrement vidéo.

Résumé des résultats: Nous avons observé que le niveau de connaissances des étudiants en début de stage était

homogène entre les groupes d'étudiants, et que l'amélioration des connaissances était significative globalement et pour chaque pathologie retenue.

Conclusions: L'utilisation de vignettes cliniques vidéo dans l'enseignement de la psychiatrie apparaît satisfaisante comme une ressource complémentaire de l'enseignement de la discipline.

3DD/2
Master Périnatalité: management et Pédagogie

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Contexte: Master Périnatalité : management et Pédagogie, une formation novatrice à l'Université de Bourgogne recentrant les sages-femmes cadres sur le cœur de leur métier : la périnatalité.

Le master PMP s'inscrit dans l'évolution de la formation initiale intégrée depuis 2010 dans le système LMD avec un nouveau programme positionnant les sages-femmes comme référentes en maïeutique.

Mais l'expertise de praticienne ne suffit pas et il était nécessaire d'avoir une formation complémentaire permettant d'acquérir des compétences et d'être partie prenante de l'ingéniérie des soins en périnatalité. Infléchir la politique en périnatalité, l'orientation des plans tant dans les établissements, les réseaux de santé et l'exercice libéral demandaient une formation spécifique et universitaire qui a été mise en place en septembre 2011. Elle a été construite avec les représentants de la profession de sage-femme autour de domaine particulier : santé publique, management, pédagogie et recherche, sur un socle commun. Ce master permet aux sages-femmes ayant un autre projet professionnel que celui de praticienne de choisir 3 voies :

Le Management ciblé sur l'économie des systèmes de santé, l'ingénierie et l'administration de soins et l'ingénierie d'un pôle périnatal public et privé.

La pédagogie ciblée sur le développement professionnel de la compétence à la capacité, les concepts et modèles d'évaluation, et la pédagogie appliquée aux formations de santé.

La recherche avec un renforcement de la méthodologie et des statistiques.

Le master PMP habilité et unique au plan national est ouvert aux étudiants français, européens et étrangers, un partenariat avec les pays francophones est vivement souhaité. Cette formation a permis un regroupement des enseignants des Universités de Bourgogne, du Grand Est, de Lyon 3, de l'Ecole Centrale de Paris et des sages-femmes expertes en périnatalité. Il permet de concilier activité professionnelle et formation universitaire grâce à une alternance d'enseignements présentiel et en e.learning.

3DD/3
La Delegation de Formation AFGSU au Regime de L'Assurance Qualite

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Contexte: Les Centre d'Enseignement des Soins d'Urgence sont responsables de l'organisation, de la qualité et de la délivrance des AFGSU. Or ils doivent déléguer cette formation aux enseignants des Instituts de formations paramédicales, formés et habilités pour cela. Cependant ces formateurs ont exprimé, dans une étude conduite sur deux ans à Marseille leurs difficultés et leur besoin d'aide pour enseigner dans le domaine de l'urgence qu'ils maitrisent mal.

Pour garantir la qualité de ces formations déléguées, le CESU 13 a donc mis en place une assurance qualité basée sur un dispositif d'évaluation des activités en AFGSU

Résumé des travaux: L'inventaire complet des activités comprises dans la formation AFGSU est nécessaire pour évaluer la conformité des ressources. L'analyse des processus permet d'identifier les flux d'information, l'organisation et la mise en œuvre des moyens : ressources humaines, compétences, locaux et équipements.

Le processus de délégation de formation, en vision systémique, comprend onze étapes de la sélection des formateurs à leur recyclage. Chaque étape est décortiquée, classée en processus, de réalisation, support ou de management et donne lieu à un outil d'évaluation.

L'ensemble des outils permet de tracer chaque étape, de passer à la suivante et aboutir à la validation et au suivi de la délégation de formation AFGSU. L'objectif étant d'uniformiser les outils pédagogiques et harmoniser les pratiques pour en garantir la qualité.

Résumé des résultats: Ce dispositif a abouti à conventionner la délégation de formation AFGSU pour 17 écoles et instituts autour de Marseille, avec 130 formateurs validés sur les 150 formés dans la région depuis 2008. L'utilisation des outils qualité permet d'encadrer et optimiser les formations AFGSU, en maintenant une communication essentielle pour cette démarche d'assurance qualité entre le CESU et les organismes de formation.

Le suivi qualité, favorise un partenariat très apprécié des enseignants en formation initiale tout en répondant aux exigences réglementaires.

3DD/4
L'empathie chez les universitaires: impact du sexe

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Nada Najem (*Saint-Joseph University, Medical Education, Beirut, Lebanon*)
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Contexte: L'empathie consiste à saisir les sentiments et les composantes émotionnelles d'un autre individu. Certaines études dans les facultés de médecine ont montré que cette capacité professionnelle importante est plus développée chez

les femmes que les hommes, mais nous manquons de données dans d'autres spécialités.

Le but de cette étude est de mesurer l'empathie dans différentes facultés et d'observer s'il y a une différence entre les deux sexes.

Résumé des travaux: On a effectué une étude transversale à l'Université Saint-Joseph, incluant 4 facultés: Médecine, Génie, Droit, et Audio-visuel. Tous les étudiants ont été interrogés. L'empathie a été mesurée avec le « Davis' Interpersonal Reactivity Index » (DIRI), un questionnaire auto-administré de 28 items.

Résumé des résultats: 966 élèves ont participé à l'étude (médecine 443, génie 351, droit 130, audio-visuel 42). L'empathie chez les étudiantes était statistiquement plus élevée que chez les étudiants de sexe masculin dans les quatre facultés (p <0,0001).

Conclusions: L'empathie, mesurée dans quatre facultés différentes, révèle une différence significative en faveur des élèves de sexe féminin dans chacune de ces institutions.

Messages à retenir: L'impact de la différence dans l'empathie entre les deux sexes doit être explorée d'avantage.

3DD/5
Empathie chez les universitaires de 1ere année

Nada Najem Nemr (*Saint-Joseph University, Family Medicine, Beirut, Lebanon*)
Elie Nemr (*Saint-Joseph University, Medical Education, Beirut, Lebanon*)
Simon Abou-Jaoude (*Saint-Joseph University, Medical Education, Beirut, Lebanon*)
Sani Hlais (*Saint-Joseph University, Family Medicine, Beirut, Lebanon*)
Alexandre Yazigi (*Saint-Joseph University, Medical Education, Beirut, Lebanon*)

(*présentateur:* Elie Nemr, Saint-Joseph University, Medical Education, Ashrafieh, Bvd Alfred Naccache, Beirut 166830, Lebanon, elie.nemr@usj.edu.lb)

Contexte: L'empathie désigne le mécanisme par lequel un individu peut comprendre les sentiments et les émotions d'une autre personne. Certains pensent que ce facteur joue un rôle dans le choix de carrière, cependant les études objectives sont déficientes.

L'objectif de notre travail est de mesurer l'empathie chez les universitaires de 1ere année dans différentes facultés afin de détecter une éventuelle différence de base.

Résumé des travaux: L'instrument de mesure choisi est le « Davis' Interpersonal Reactivity Index » (DIRI) composé de 28 items. 354 étudiants de première année ont rempli le questionnaire. Les étudiants étaient répartis sur 4 facultés (Médecine 78, Génie 160, Droit 88, Audio-visuel 28).

Résumé des résultats: Les étudiants de génie ont marqué les scores les plus bas avec une différence significative par rapport aux étudiants de médecine, droit et audio-visuel (p < 0.05). Par contre, pas de différence significative entre les étudiants des 3 autres facultés.

Conclusions: L'empathie, mesurée en début de première année chez des étudiants de diverses facultés, n'est pas uniforme.

Messages à retenir: Cette variabilité dans l'empathie peut jouer un rôle dans le choix et l'orientation de carrière, et son impact réel mérite une exploration plus approfondie.

3DD/6
Simulation haute-fidélité et développement professionnel continu. Des recommandations à la pratique

Thierry Secheresse (*Centre Hospitalier de Chambéry, CEnSIM - Centre d'Enseignement par Simulation, Chambéry, France*)
Pascal Usseglio (*Centre Hospitalier de Chambéry, CEnSIM - Centre d'Enseignement par Simulation, Chambéry, France*)
Catherine Jorioz (*Centre Hospitalier de Chambéry, CEnSIM - Centre d'Enseignement par Simulation, Chambéry, France*)
Daniel Habold (*Centre Hospitalier de Chambéry, CEnSIM - Centre d'Enseignement par Simulation, Chambéry, France*)
Guy-Pierre Martin (*Centre Hospitalier de Chambéry, Direction générale, Chambéry, France*)

(*présentateur:* Thierry Secheresse, Centre Hospitalier de Chambéry, CEnSIM - Centre d'Enseignement par Simulation, CEnSIM; Centre Hospitalier de Chambéry; BP 1125; 73011 Chambéry cedex, Chambéry 73000, France, thierry.secheresse@ch-chambery.fr)

Contexte: Le but de ce travail est de présenter les modalités de réalisation d'un programme de formation continue utilisant la simulation haute-fidélité et destiné aux équipes d'urgence pré hospitalière.

Résumé des travaux: Mise en place de sessions de simulation haute-fidélité. L'évaluation de ce programme a été réalisée au travers de deux études. La première, portant sur la réanimation cardio-pulmonaire, mesurait l'efficacité de cette formation en utilisant le modèle de Kirkpatrick. La seconde mesurait l'évolution du sentiment d'auto-efficacité concernant la prise en charge des urgences pédiatriques.

Résumé des résultats: Les résultats de la première étude révèlent un effet bénéfique de ce programme sur le plan des apprentissages théoriques et pratiques (p < 0,001). Ils révèlent également une amélioration de la prise en charge des patients victimes d'arrêt cardiaque confirmant un transfert effectif des apprentissages (p = 0,037).

Les résultats de la seconde étude semblent confirmer l'intérêt de la simulation de par l'augmentation du sentiment d'auto-efficacité

Conclusions: Les résultats de ces études nous permettent de mieux appréhender la portée de la simulation pour la formation continue des professionnels de santé. La pérennisation de ce type de programme n'est possible qu'avec une réelle volonté institutionnelle dans le cadre d'une politique d'amélioration de la qualité des soins et de prévention des risques.

3DD/7
Enseignement intégré multimedia de la Cancérologie avec composantes présentielle et non présentielle en ligne, au sein de la Faculté Paris Diderot

Guilhem Bousquet (*Hôpital Saint-Louis, Medical Oncology, Paris, France*)
Maxime Battistella (*Hôpital Saint-Louis, Pathology, Paris, France*)
Jérôme Cros (*Hôpital Lariboisière, Pathology, Paris, France*)
Aurélie Fabre (*Hôpital Bichat, Pathology, Paris, France*)
Sandrine Faivre (*Hôpital Beaujon, Medical Oncology, Clichy, France*)

Philippe Bertheau *(Hôpital Saint-Louis, Pathology, Paris, France)*

(présentateur: Guilhem Bousquet, Hôpital Saint-Louis, Medical Oncology, 1, avenue Claude Vellefaux, Paris 75010, France, guilhem.bousquet@sls.aphp.fr)

Contexte: A partir d'une expérience préalable de l'équipe d'anatomopathologie de la Faculté de médecine Paris Diderot, sont mis en place, pour l'année 2013, des enseignements dirigés de Cancérologie intégrée avec une composante en ligne non présentielle suivie d'une validation et d'une consolidation présentielle en salle.
Résumé des travaux: La composante non présentielle s'effectue au travers d'un site Web accessible à tous les étudiants. Ce site est actualisé en ligne par chaque enseignant du module. Le contenu multimédia comporte : i) une observation clinique ; ii) des illustrations ou autres medias uploadés sur le site ; iii) des illustrations ou autres medias auxquels on accède par des liens pointant vers des ressources distantes telles des lames virtuelles microscopiques, des clichés radiologiques, des vidéos, ou d'autres sites pédagogiques.
L'étudiant consulte cette observation et est invité à répondre à des questions qu'il rendra sur une copie le jour de l'enseignement dirigé présentiel. Un système de réponse en ligne est en préparation, au travers d'une plate-forme de e-learning Moodle. Lors des enseignements dirigés présentiels, les connaissances acquises en ligne sont discutées par l'enseignant à l'aide d'une présentation originale mais s'appuyant sur les contenus en ligne.
Résumé des résultats:
Conclusions: Le contenu de ces enseignements dirigés est intégré au contrôle de connaissance final. L'examen peut ainsi comporter sur l'énoncé un extrait des documents en ligne avec des questions s'y rapportant. Un formulaire d'évaluation de ces enseignements intégrés sera remis aux étudiants.

3DD/8
La disponibilité des diapositives avant les cours est associée avec des effectifs d'étudiants présents en cours plus élevés

Sophie Pelloux *(Université de Lyon, Faculté de Médecine Lyon, France)*
Patrick Lermusiaux *(Université de Lyon, Chirurgie Vasculaire, Hôpital Edouard Herriot, France)*

(présentateur: Sophie Pelloux, Faculté de Médecine Lyon Est 8 avenue Rockefeller, Lyon, 69008, France, s.pelloux@gmail.com)

Contexte: Les diapositives semblent n'avoir des effets positifs sur l'apprentissage que lorsque les étudiants peuvent y avoir accès à l'avance. Mais certains enseignants craignent que leur mise en ligne avant les cours soit associée avec une diminution des effectifs présents en cours.
Résumé des travaux: Une étude de cohorte prospective a été menée sur des étudiants en médecine de l'université de Lyon (n=208) pendant l'année 2010-2011 pour vérifier s'il existe une association entre disponibilité des diapositives et présence des étudiants en cours.
Résumé des résultats: L'analyse par discipline montre une corrélation positive (p<0.05) entre la disponibilité moyenne des diapositives avant les cours et l'effectif moyen par discipline. L'effectif moyen des cours dont les diapositives étaient disponibles avant était le double de celui des cours dont les diapositives n'étaient pas disponibles avant (61% contre 31%, p<0.001).
Conclusions: Cette étude ne permet pas d'affirmer l'existence d'un lien de causalité entre disponibilité des diapositives et effectifs en cours. Cependant, elle montre que la disponibilité des diapositives avant les cours est associée avec des effectifs d'étudiants présents en cours plus élevés.
Messages à retenir: Compte tenu des effets positifs potentiels des diapositives sur l'apprentissage, ces résultats sont de nature à encourager la mise en ligne des diapositives avant les cours.

3DD/9
Evolution des connaissances théoriques après une formation sur la prise en charge des voies aériennes supérieures (VAS) : Qui sont les meilleurs élèves ?

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Didier Pean *(CHU Nantes, SAR Anesthésie Réanimation Chirurgicale, Hôtel Dieu H.M.E. , Nantes, France)*
Cecile Magne *(CHU Nantes, SAR Anesthésie Réanimation Chirurgicale, Hôtel Dieu H.M.E. , Nantes, France)*
Xavier Combes *(CH Felix-Guyon, SAMU 974, St Denis - La Réunion, France)*
Olivier Langeron *(Groupe Hospitalier la Pitié-Salpêtrière-APHP, SAR Anesthésie Réanimation Chirurgicale, Paris, France)*
Corinne Lejus *(CHU Nantes, SAR Anesthésie Réanimation Chirurgicale, Hôtel Dieu H.M.E. , Nantes, France)*

(présentateur: Laurent Brisard, G.R. CHU Laennec, SAR Anesthésie Réanimation Chirurgicale, Boulevard Jacques Monod, Nantes 44800, France, laurent.brisard@me.com)

Contexte: La Formation des référents aux Techniques d'Intubation Difficile(FRTID) est une formation multidisciplinaire(anesthésistes, urgentistes et réanimateurs) théorique et pratique(ateliers et simulation haute-fidélité) sur la prise en charge des VAS.L'objectif était d'analyser l'impact de la formation sur l'amélioration des connaissances théoriques des participants en fonction des spécialités représentées.
Résumé des travaux: L'analyse portait sur deux sessions nantaises(2010 et 2011).Un questionnaire identique(QCM et questions réponses ouvertes courtes) était remis aux participants avant et après formation.Il comportait respectivement 26 questions en 2010 et 20 en 2011(notes ramenées sur 20).Seuls les questionnaires nominatifs étaient pris en compte pour l'analyse comparative.Les notes (N0 avant la formation,N1 après la formation,N0+N1 note globale)étaient exprimées en médiane(25-75%).Test de Wilcoxon pour la comparaison des notes(avant vs. après)et Mann-Whitney pour l'analyse selon spécialité(anesthésistes vs. non-anesthésistes). p
Résumé des résultats: Sur 81 participants,32 questionnaires(39,5%)nominatifs étaient analysés (anesthésistes=21,urgentistes-réanimateurs=11).Toutes spécialités confondues,N1(9[6-13])était supérieur à N0 (6[3-8]) (p
Conclusions: Les notes restaient faibles du fait de la difficulté des questionnaires.Les participants abordaient la formation

avec des connaissances théoriques incertaines.L'évaluation montrait une augmentation des connaissances plus marquée pour les réanimateurs et les urgentistes que pour les anesthésistes.

Messages à retenir: La FRTID ou un programme d 'enseignement sur la prise en charge des VAS permet un bénéfice pédagogique plus marqué pour les spécialistes non-anesthésistes.

3DD/10
Impact du stress et de l'approche d'apprentissage sur la sélection en première année commune des études de santé (PACES) en France

Marie-Paule Gustin (*Faculté de Pharmacie, Université Claude Bernard Lyon 1, Département de santé publique, pôle Mathématiques, Statistique, Informatique, Lyon, France*)
Siara Isaac (*Université Claude Bernard Lyon 1, service Innovation Conception et Accompagnement pour la Pédagogie, Lyon, France*)

(*présentateur:* Marie-Paule Gustin, Faculté de Pharmacie, Université Claude Bernard Lyon 1, Département de santé publique, pôle Mathématiques, Statistique, Informatique, 8, avenue Rockefeller, Lyon 69008, France, gustin@univ-lyon1.fr)

Contexte: La Première Année Commune des Etudes de Santé (PACES) en France est sanctionnée par un concours particulièrement sélectif. L'influence du statut social de la famille sur la réussite des étudiants est bien établie.
Résumé des travaux: Pour analyser les facteurs liés à l'apprentissage qui influencent la sélection, nous avons développé un outil basé sur le questionnaire R-SPQ-2F de John Biggs enrichi d'items portant sur le stress et les habitudes de travail.
Résumé des résultats: Une analyse préliminaire des résultats du premier semestre (n = 1989) montre des tendances similaires pour les primants et redoublants quand les co-variables sexe, série et mention au baccalauréat sont prises en compte. Les éléments qui contribuent le plus à une amélioration du rang mérite sont une certaine quantité de travail personnel, une approche « motivation profonde », une approche « stratégie surfacique » et une meilleure gestion du stress. Par contre, une approche «motivation surfacique » et un travail isolé ont un effet négatif.
Conclusions: Une analyse détaillée de la sélection en PACES en fonction du stress, des méthodes d'apprentissage et du profil R-SPQ-2F des étudiants lors du concours 2012 sera présentée.
Messages à retenir: Les approches d'apprentissage influencent la réussite au concours en santé. Ce constat permettra d'identification des stratégies pour faire progresser les étudiants.

3DD/11
Validation d'une traduction française du « Revised Study Process Questionnaire (R-SPQ) ».

Marie-Paule Gustin (*Faculté de Pharmacie, Université Claude Bernard Lyon 1, Département de santé publique, pôle Mathématiques, Statistique, Informatique, Lyon, France*)
Anne Baroffio (*Université de Genève, Unité de développement et de recherche en éducation médicale, Genève, Switzerland*)
Margaret G. Weidenbach (*Université de Genève, Unité de développement et de recherche en éducation médicale, Genève, Switzerland*)
Milena Abbiati (*Université de Genève, Unité de développement et de recherche en éducation médicale, Genève, Switzerland*)
Siara Isaac (*Université Claude Bernard Lyon 1, service Innovation Conception et Accompagnement pour la Pédagogie, Villeurbanne, France*)

(*présentateur:* Marie-Paule Gustin, Faculté de Pharmacie, Université Claude Bernard Lyon 1, Département de santé publique, pôle Mathématiques, Statistique, Informatique, 8, Avenue Rockefeller, Lyon 69008, France, marie-paule.gustin@univ-lyon1.fr)

Contexte: Le R-SPQ évalue le style cognitif intrinsèque de l'étudiant (Biggs, et al., 2001) ; il permet de discriminer 4 approches d'apprentissage: en profondeur, en surface, motivée et stratégique. Ces approches sont reliées avec la performance de l'étud
Résumé des travaux: Afin de la valider dans différents contextes, une traduction française du R-SPQ a été réalisée et soumise à différentes populations d'étudiants: 1989 étudiants de Première Année Commune des Etudes de Santé (PACES, France), 500 étudiants de première année de médecine (Suisse) et 300 étudiants de la faculté des sciences (France).
Résumé des résultats: Une analyse préliminaire en PACES montre une consistance interne acceptable pour les 2 échelles profonde/surface mais une faiblesse des 4 sous échelles lorsque les étudiants sont en situation de compétition sévère. Des résultats plus approfondis seront présentés à la Conférence.
Conclusions: L'influence du contexte est visible dans les réponses des étudiants. La version finale de la traduction a des valeurs acceptables de consistance interne suivant les échelles.
Messages à retenir: Le R-SPQ, maintenant disponible en français, apporte des informations intéressantes sur les approches d'apprentissage des étudiants selon le contexte.

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SESSION 4: Simultaneous Sessions
Monday 27th August: 1600-1800

4A Symposium: Assessing Tomorrow's Learners

Trudie Roberts (*Leeds Institute of Medical Education, UK*)
Cees van der Vleuten (*Maastricht University, The Netherlands*)

This symposium will examine what assessment of learners in the future might look like. Assessment is an area that is going through major changes. Radical viewpoints and concrete illustrations will be given by assessment experts from various parts of the world. The pros and cons of these illustrations

will be discussed with a forum of these speakers and with the audience.

4B Symposium: The Global Pediatric Education Consortium: Reforming Medical Education in Post-graduate Pediatric Training and Practice

Harish Amin (*Royal College of Physicians and Surgeons of Canada*)
Nadia Badrawi (*Egyptian Pediatric Association, Egypt*)
Bipin Batra (*National Board of Examinations, India*)
Hazen Ham (*American Board of Pediatrics, United States*)
Alfred Tenore (*European Academy of Paediatrics, Italy*)

The Global Pediatric Education Consortium (GPEC) is comprised of delegate organizations that are responsible for post-graduate pediatric training and assessment in over 50 countries. GPEC is working with delegate organizations to create 1) a standardized curriculum, 2) a web-based assessment toolbox, 3) guidelines for training and national certification programs, and 4) continuous professional development. Panelists will provide an overview of each component, the status of development, and our timeline for implementing each component worldwide.

4C AMEE Fringe 1

4C/1
How to teach" Informed consent" through 'group therapy' in 18 minutes!

K H Mujtaba Quadri (*Shifa College of Medicina and Shifa International Hospital, Shifa Tameer-e-Millat University, Islamabad, Pakistan*)

(*Presenter:* K H Mujtaba Quadri, Shifar College of Medicine and Shifa International Hospital, Shifa Tameer-e-Millat University, Pitras Bukhari Road, Sector H-8/4, Islamabad, Pakistan, mujtabaquadri@hotmail.com)

A session on "Informed consent" for 2nd year Medical students may be facilitated in several ways viz: lectures/sermons, small groups and role-play/videotaped sessions. How about "group therapy" with the session involving experiential learning of all the key features of informed consent while the facilitator takes consent for the therapy? The audience will experience and arrive at an "informed decision" on whether they stay on in the hall or have the alternative therapy at the coffee shop!

4C/2
Best memory of medical school - the Kimberley!

Donna B Mak (*University of Notre Dame, Fremantle, School of Medicine, Perth, Australia*)
Ilse O'Ferrall (*University of Notre Dame, Fremantle, School of Medicine, Perth, Australia*)

Alan Wright (*University of Notre Dame, Fremantle, School of Medicine, Perth, Australia*)
Rohan Carter (*Geraldton Regional Aboriginal Medical Service, Geraldton, Australia*)
Kate Johnson (*Sir Charles Gairdiner Hospital, Perth, Australia*)
Pallas O'Hara (*Royal Darwin Hospital, Darwin Australia*)
Andrew Saunders (*School of Medicine, University of Notre Dame, Fremantle, Australia*)

(*Presenter:* Donna B Mak, University of Notre Dame, Fremantle, School of Medicine, PO Box 1225, Fremantle, Western Australia 6959, Australia, donna.mak@nd.edu.au)

Background: The Rural and Remote Health Placement Program (RRHPP) is a teaching and learning collaboration between Notre Dame's School or Medicine and rural (Wheatbelt) and remote (West Kimberley) communities. The RRHPP facilitates medical students' development of patient- and community-centred perspectives on rural and remote health issues by having them live and work with people in these areas prior to clinical placements. It is based on sound educational principles and underpinned by participation of rural/remote communities as expert, equal teaching partners. The RRHPP is valued by students and placement hosts as a useful strategy to improve health care for people from rural and remote areas.
Structure of the presentation: The presentation will cover:
• The rationale for, and educational principles underpinning, the RRHPP; • Description of the RRHPP; • How students are prepared for, and debriefed after, the RRHPP; • Logistics of implementing the RRHPP, including dealing with challenges and pitfalls; • Students' and communities' views of the RRHPP. This will be done by staff and alumni using a mixture of conversation, film, photographs, music and question and answer with participants.
Intended outcomes: Participants will be: • Entertained; • Shown a community- centred approach to medical education; • Invited to contribute their ideas to improve the RRHPP.

4C/3
Mastering the Force of IT tools in medical education

Tudor Calinici (*University of Medicine and Pharmacy Iuliu Hatieganu Cluj Napoca, Medical Informatics and Biostatistics, Cluj Napoca, Romania*)

(*Presenter:* Tudor Calinici, University of Medicine and Pharmacy Iuliu Hatieganu Cluj Napoca, Medical Informatics and Biostatistics, Louis Pasteur no 6, Cluj Napoca 400349, Romania, tcalinici@umfcluj.ro)

A long time ago, in a University far, far away, there was an Informatics and Biostatistics department. At that time, the department taught just one discipline for three specialisations in the Romanian language. After a short time, the increasing number of students, the development of new specialisations, the implementation of the programs in different teaching languages, the Bologna Process and so on changed the situation dramatically. Even with twice as many teaching staff as before, they were overwhelmed. When all hope seemed lost, they found the most powerful weapon in the Galaxy – the IT instruments – and they managed to keep the situation under control. The Galactic Senate heard about this victory and asked one member of the department to show them how they did it. He presented to them the IT

instruments that were implemented for different purposes – managing the didactic activity, developing applications for secretarial work, supporting the Curriculum Office, the implementation of an e-learning platform, the implementation of a virtual patients' platform, and so on. He also explained the dangers that surrounded these kinds of activities and gave them some tips to avoid failure in using the Force of IT instruments to deliver a quality medical education.

4C/4
Welcoming InterProfessional Elephants (IPE) into the room

Peter Gallagher (*Medical Education Unit, Wellington, New Zealand*)

(*Presenter:* Peter Gallagher, Medical Education Unit, PO Box 7343, Wellington 6242, New Zealand, peter.gallagher@otago.ac.nz)

In health professional education there is a maxim that goes something like this: "If we work together then we should learn together". There is also a clear implication in this statement that interprofessional learning applies not only to members of the professions but also undergraduates of the respective professions. The contemporary enthusiasm for the inclusion of IPE or IPL in undergraduate programmes makes criticism akin to heresy, with naysayers hurriedly labelled as patch protectionists. When I left an academic post in a school of nursing to work a medical school, a trusted colleague said of my move: "So, you are going over to the dark side". That remark may well capture a major problem that confronts attempts at IPE at the undergraduate level. This fringe session is an opportunity for educators from any health profession to safely release their own elephant into the room.

4D Communications courtes (en français): Collaboration interprofessionnelle – Professionnalisme

4D/1
La prise en charge interprofessionnelle des patients en Médecine Interne : Attentes et perceptions des rôles entre les médecins internes et les infirmiers(ères)
V Muller-Juge (*Faculté de Médecine, Université de Genève, Unité de Développement et de Recherche en Education Médicale (UDREM), Genève, Switzerland*)
K S Blondon (*Hôpitaux Universitaires de Genève, Service de Médecine Interne Générale, Genève, Switzerland*)
S Cullati (*Hôpitaux Universitaires de Genève, Service Qualité des Soins, Genève, Switzerland*)
N V Vu (*Faculté de Médecine, Université de Genève, Unité de Développement et de Recherche en Education Médicale (UDREM), Genève, Switzerland*)
G L Savoldelli (*Hôpitaux Universitaires de Genève, Service d'Anesthésiologie, Genève, Switzerland*)
M R Nendaz (*Hôpitaux Universitaires de Genève, Service de Médecine Interne Générale, Genève, Switzerland*)

(*présentateur:* Virginie Muller-Juge, Faculté de Médecine, Université de Genève, Unité de Développement et de Recherche en Education Médicale (UDREM), Rue Michel-Servet 1, Genève 4 1211, Switzerland, virginie.muller-juge@unige.ch)

Contexte : Une prise en charge interprofessionnelle efficace nécessite un partage des attentes et des perceptions. L'objectif était de décrire les attentes et les perceptions des rôles des médecins-internes et des infirmiers(ères).
Résumé des travaux: 14 médecins-internes et14 infirmiers(ères) volontaires de Médecine Interne Générale ont participé. Des entretiens individuels semi-structurés ont été conduits, et analysés par la théorie ancrée et l'analyse thématique.
Sur un questionnaire, les participants ont choisi leurs actions prévues et celles attendues de l'autre professionnel pour 11 situations cliniques.
Résumé des résultats : Entretiens : les sujets avaient globalement des représentations congruentes sur leurs rôles. Cependant, il existait des divergences de perceptions et d'attentes concernant la collaboration interprofessionnelle (notamment écoute des médecins) et la participation des infirmiers(ères) au processus de décision. Tous souhaitaient connaître d'avantage la profession de l'autre.
Questionnaires : la corrélation était de 0.56 (p=0.08) entre les attentes des médecins-internes et les actions prévues par les infirmiers(ères), et de 0.80 (p
Conclusions : Certains aspects des rôles médico-infirmiers n'ont pas été perçus, attendus, et compris de la même manière par les deux corps professionnels.
Messages à retenir : La formation interprofessionnelle devrait encourager la compréhension mutuelle des rôles entre médecins-internes et infirmiers(ères).

4D/2
La communication d'une mauvaise nouvelle : un nouveau modèle d'enseignement et d'évaluation des connaissances à court et à long terme.

Tony Ibrahim (*CHU-Hotel Dieu de France, Université Saint-Joseph, medecine interne, Beyrouth, Lebanon*)
Georges Maalouly (*CHU-Hotel Dieu de France, Université Saint-Joseph, medecine interne, comite d'enseignement post doctoral, Beyrouth, Lebanon*)
Elie Nemer (*CHU-Hotel Dieu de France, Université Saint-Joseph, urologie, comite d'enseignement post doctoral, Beyrouth, Lebanon*)
Elie Haddad (*CHU-Hotel Dieu de France, Université Saint-Joseph, maladies infectieuses, Beyrouth, Lebanon*)
Charbel Yazbeck (*CHU-N.D des Secours, Université Saint-Esprit de Kaslik, Gastro-enterologie, Byblos, Lebanon*)
Fady Haddad (*CHU-Hotel Dieu de France, Université Saint-Joseph, medecine interne, comite d'enseignement post doctoral, beyrouth, Lebanon*)

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Contexte : La vie d'un malade est affectée aussi bien par les actes du médecin que par sa parole et son comportement. L'annonce de la mauvaise nouvelle est un défi pour les médecins. Cette étude vise à déterminer l'utilité d'un atelier dans l'amélioration de l'annonce de la mauvaise nouvelle.

Résumé des travaux: C'est une étude interventionnelle cas témoins avec un groupe atelier comprenant 21 résidents et un groupe contrôle de 27 résidents. L'atelier comportait trois étapes et inspiré du model SPIKES. La méthode d'évaluation comportait 3 étapes théoriques/écrites (pré-test avant l'atelier, post-test 3 mois après et Post-test après 2 ans) et une étape pratique grâce à un examen clinique objectif et structuré (ECOS) 4 mois post-ateliers avec un évaluateur aveugle.

Résumé des résultats: Amélioration théorique chez le groupe atelier (11.2, 13 et 14.1 pour les moyennes respectives du pré-test, post-test 3mois et post test 2 ans valeur p

Conclusions: Selon notre étude, le model SPIKES a pu améliorer l'apprentissage théorique mais pas la pratique de l'annonce de la mauvaise nouvelle.

Messages à retenir: La pratique de l'annonce de la mauvaise nouvelle nécessite d'autres méthodes telles que des apprentissages par des cas simulés ou directement sur le patient.

4D/3
Annoncer un décès : une approche différente est-elle requise au service des urgences?

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Contexte: Le consensus de la littérature médicale générale sur la divulgation d'un décès à un proche suggère l'utilisation d'un terme clair, univoque (décédé/mort) pour l'annonce et une approche graduelle en « escalier ». L'éparse littérature d'urgence sur les préférences des médecins s'oppose à ce consensus. Ce qui amène la question : Est-ce le résultat d'un échantillon atypique ou le contexte des urgences exige-t-il une pratique différente?

Résumé des travaux: Nous avons réalisé des entrevues semi-dirigées avec des praticiens d'urgence aguerris, médecins et infirmières, pour comprendre leur stratégie d'annonce. Les entrevues étaient basées sur des divulgations récentes, mais nous avons élargi notre exploration au-delà du cas de référence. Nous avons effectué une analyse qualitative de nos données.

Résumé des résultats: Nous avons réalisé huit entrevues et opéré une validation interne et externe. Le nombre auto-estimé de participations des interviewés à une divulgation dépassait 2000. Tous les médecins des groupes d'étude et de validation évitent l'utilisation d'un euphémisme, en accord avec le consensus général. Nous avons mis à jour une hétérogénéité quant à la stratégie préparatoire.

Conclusions: Nos résultats soutiennent l'approche prônée par la littérature générale sur le dévoilement d'un décès.

Messages à retenir: Les stratégies de divulgation d'un décès au service des urgences concordent avec les recommandations formulées dans la littérature générale.

4D/4
Des ancrages pour mieux collaborer

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Contexte: Le peu d'opportunités d'échanges entre apprenants de différents programmes en sciences santé contribuerait aux difficultés de collaboration interprofessionnelle (CIP).

Résumé des travaux: Inspiré des principes de l'apprentissage expérientiel, un atelier interactif visant à établir quatre plans de soins concertés pour des problèmes musculo-squelettiques fut offert à 27 apprenants de rhumatologie, de médecine de famille et de réadaptation. Les interactions furent analysées à partir d'une classification des verbalisations. Une analyse thématique de groupes focalisés a permis de définir le concept du "bon collaborateur" et les apprentissages identifiés par les apprenants.

Résumé des résultats: Hormis les verbalisations liées à la prise de décision et à la solidarisation, plusieurs comportements favorables à la CIP sont identifiés et manifestés d'emblée par les apprenants. Les apprentissages effectués sont: connaissance du rôle/approche des autres professions; valorisation de son propre rôle par l'intérêt porté par les autres; identification des modalités d'échange des informations du patient; explicitation des bénéfices de synergie des interventions.

Conclusions: Cette activité a permis de consolider des attitudes favorables, des connaissances et des intentions de collaboration quoique certaines habilités nécessaires à l'établissement d'un plan concerté ne se sont pas manifestées spontanément chez les apprenants.

Messages à retenir: Les activités interdisciplinaires devraient être favorisées car elles permettent d'apprendre à propos de soi et des autres.

4D/5
Enseigner les pratiques collaboratives: Implantation d'un curriculum interfacultaire en sciences santé et psychosociales à l'Université de Montréal

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Contexte: La prestation efficiente de soins exige l'interdépendance entre les professionnels de la santé, le patient et ses proches et une collaboration interprofessionnelle efficace. Afin de mieux préparer les étudiants à cette réalité, nous avons développé au premier cycle 3 cours interfacultaires de formation à la collaboration.
Résumé des travaux: Un projet pilote (2008-2009), a démontré la faisabilité d'activités interfacultaires dans une grande cohorte d'étudiants (>700). Trois cours obligatoires de 1 crédit de collaboration en sciences santé ont été implantés en 2010-2011 dans 10 programmes (audiologie, ergothérapie, médecine, nutrition, orthophonie, pharmacie, physiothérapie, psychologie, sciences infirmières, service social).
Résumé des résultats: Chaque cours inclut 15 heures de travail structuré : A) des modules en ligne, B) une activité préparatoire intradisciplinaire et, C) un atelier interprofessionnel. Les thèmes sont : la découverte des professions et du partenariat de soins (CSS1900); la clarification et l'application des principes de collaboration (CSS2900); l'intégration des concepts de collaboration par la simulation d'une réunion d'équipe interprofessionnelle (CSS3900).
Conclusions: Le soutien des doyens, l'engagement des enseignants et une coordination rigoureuse ont permis l'implantation d'un curriculum conjoint de formation à la collaboration regroupant 10 programmes. Les prochaines étapes viseront l'évaluation de l'impact du programme, le perfectionnement de l'évaluation des apprentissages et l'intégration d'autres disciplines.

4D/6
Intégration de patients partenaires enseignants dans un atelier interfacultaire de simulation de réunion interprofessionnelle: un projet pilote à l'Université de Montréal

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Contexte: Ce projet pilote a évalué l'intégration de patients partenaires enseignants (PPE) comme co-animateur avec un professionnel de la santé d'un atelier de simulation d'une réunion d'équipe interprofessionnelle auprès d'étudiants de 3e année de 10 programmes des sciences de la santé.
Résumé des travaux: Le PPE donnait une rétroaction aux étudiants sur leur considération pendant l'atelier des besoins du patient de la vignette clinique et de son projet de vie. Un PPE était intégré dans 24 des 100 groupes de discussion de 11 étudiants. Un questionnaire d'appréciation sous forme d'échelles de Likert (1=Totalement en désaccord à 5= Totalement en accord) a été complété par les 254 étudiants du projet pilote. Les données sont rapportées en moyenne ± écart-type.
Résumé des résultats: La pertinence de la participation d'un PPE à cette activité a été jugée élevée (4,66±0,56), les étudiants ont accordé plus d'importance au point de vue du patient (4,33±0,75) et ont mieux saisi les enjeux de l'implication du patient dans ses soins (4,38±0,66). La majorité des étudiants (67%) croit que la présence du PPE a influencé leur façon d'agir pendant l'atelier (3,90± 0,92).
Conclusions: Suite à cette expérience positive, nous visons inclure un PPE dans chaque groupe de discussion de cette activité pédagogique.
Messages à retenir: Ce projet pilote a démontré la pertinence et la faisabilité d'intégrer des PPE dans un atelier de discussion.

4D/7
Activités d'apprentissage interprofessionnelles dans le cadre d'un continuum de formation universitaire à la collaboration : résultats d'un projet pilote en stages cliniques

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Contexte: L'application des connaissances sur la Collaboration Interprofessionnelle en Partenariat avec le Patient et ses Proches (CIPPP) exige l'élaboration d'activités d'apprentissage qui permettront le développement des savoirs dans l'action. Des activités interprofessionnelles en stage (AIS) ont ainsi été proposées à des étudiants de 10 programmes universitaires (audiologie, ergothérapie, médecine, nutrition, orthophonie, pharmacie, physiothérapie, psychologie, sciences infirmières, service social) de quatre facultés.

Résumé des travaux: Une étude pilote, menée entre janvier et avril 2012, a permis d'identifier les processus de planification et d'implantation des AIS au sein d'équipes de soins hospitaliers (n=2), de réadaptation (n=1) et du milieu communautaire (n=1) et discuter des résultats obtenus (utilisation des outils d'évaluation, niveau de satisfaction des acteurs, obstacles rencontrés). L'appréciation du projet consiste en des évaluations de satisfaction et des groupes de discussion auprès des participants aux AIS (stagiaires (n=26), superviseurs cliniques (n=29), coordonateurs d'AIS (n=5) et gestionnaires de l'enseignement des milieux (n=6)).

Résumé des résultats: Le processus d'implantation inclut une formation des enseignants cliniciens des contextes cliniques ciblés (n=91), l'identification des activités d'apprentissage à partir des pratiques courantes des professionnels en exercice et les modalités d'évaluation des stagiaires, à partir d'indicateurs spécifiques au niveau de formation des étudiants. L'élaboration d'un plan d'intervention interprofessionnel en partenariat avec le patient et ses proches a été exigée pour tous les stagiaires concernés.

Conclusions: Malgré certaines difficultés liées à l'implantation des AIS, les résultats appuient fermement leur pertinence et supportent l'idée de favoriser les échanges professionnels entre les étudiants de professions distinctes autant en milieu universitaire qu'en milieu clinique.

4E Short Communications: Written Assessment

4E/1
Do images influence assessment in anatomy? An exploratory study of cognitive processes used by students

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Background: Assessment is an important aspect of medical education because it tests competence of students and motivates them to study. In anatomy, various assessment methods with and without images, are used.

Summary of work: In this study we investigated extended matching questions (EMQs). To gain insight in the influence of images, we focused on the cognitive processes in students while answering questions with and without images. Seventeen first year medical students answered EMQs about gross anatomy, combined with either images or alphabetical answer lists, while thinking aloud. The subjects' verbal reports were transcribed verbatim and then coded. Initial codes were based on a task analysis and some minor adaptations were made during the coding process.

Summary of results: Results showed that students visualized less often and used more cues from the answer options in EMQs with images. Ready knowledge was used equally often in both conditions.

Conclusions: In conclusion, EMQs with and without images elicit different cognitive processes and seem to measure different skills, thus making them valid for different testing purposes.

Take-home messages: Take home message for anatomy teachers: questions without images seem to more appropriately test the quality of the mental image of students while questions with images better test their ability to extract cues.

4E/2
An Innovative Approach for Final Medical Examinations

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Background: The demands of high stakes examinations are well documented – reliablity, feasibility and validity. For final year students, exams should ideally integrate testing of knowledge, data interpretation, diagnostics, decision making, and a host of other skills in realistic patient scenarios.

Summary of work: Our institution decided to develop a single best answer (SBA) exam with several items nested within developing clinical episodes. After piloting and dissemination of exemplars, two papers of 120 questions were written. Each had 30 scenarios representative of junior trainee activity. Students will sit the papers in April/May 2012.

Summary of results: The pilot and exemplars were well received. The questions had good face validity. Blueprinting was challenging to ensure spread across the final year curriculum within the cases. Writing cases with clinical realism but avoiding cueing was difficult. Involvement of subject experts was problematic before writing expertise was

developed. Question examples and exam performance data will be presented.

Conclusions: An SBA format test better suited to final year students is presented. Challenges in blueprinting and question design can be overcome.

Take-home messages: Complex case scenarios incorporating SBAs can be developed. These better meet the demands of examining final year medical students.

4E/3
Does learning style impact on a student's ability to answer single best answer MCQs correctly?

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Background: System, Peoples and Population is a foundation module for first year medical students at QUB which incorporates anatomy, physiology, evidence based practice, ethical and legal issues and psychosocial aspects of medicine. All but the last are examined, at least in part, by 40 single best answer MCQs.

Summary of work: Honey & Mumford learning style behavioural data together with consent to use these data in research was obtained from 260 students before the semester commenced.

Summary of results: Analysis of the 40 questions was by logistic regression (correct/incorrect response regressed on learning style scores). Thirty questions showed no association with learning style. Of the 10 that did, three were negatively associated with activist learning; one was positively and one negatively associated with a pragmatist style; two were positively associated with a theoretical style; and two were positively and one negatively associated with a reflective style of learning.

Conclusions: Although these results do not indicate large differences in performance, they might suggest a slight advantage to theoretical/reflective learners compared to active learners, at least in this mixed module.

Take-home messages: Educators should consider the potential relationship between learning styles and assessment performance when offering students feedback.

4E/4
Assessing the impact of preparedness and motivation on the results of a high-stakes medical examination

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Background: It is generally assumed that careful preparation and the application of stakes to an examination affect performance. We studied this hypothesis using the International Foundations of Medicine (IFOM) Clinical Science Examination (CSE) and the USMLE Step 2 clinical knowledge examination. The contents and formats of the examinations are similar.

Summary of work: We compared the IFOM CSE scores and Step 2 CK scores for third year US medical students who took the IFOM CSE in 2010 and 2011, and subsequently Step 2 CK. The IFOM was taken under low-stakes conditions; the Step 2 CK exam is high stakes. Based on the similarity between the examinations, we used the IFOM scores to project Step 2 CK scores that that students would have achieved on Step 2 CK without preparation and in low stakes situations. The actual Step 2 CK scores earned by students under high-stakes administration conditions were subsequently matched and correlated with projected ones (R = 0.79).

Summary of results: Mean observed Step 2CK score was 1.4 SD higher that the projected mean score. Stakes and preparation increase performance relatively uniformly across ability levels.

Conclusions: Motivation and preparedness are suggested as likely reasons for the substantive score increase.

Take-home messages: Raising examination stakes and providing an ample period of preparation time will significantly improve performance.

4E/5
A comparison of judgement-based and objective standard setting methods for written examinations: Ebel versus Rasch

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Background: Ebel-based methods are often employed to rate the difficulty and relevance of items making up an exam. This is time-consuming, and there are concerns over the maintenance of standards over time. Through the use of common anchor items, Rasch-based IRT methods allow for tests to be 'equated'.

Summary of work: The Ebel approach to setting the passing standard was employed for 4th year undergraduate written examinations in the summers of 2011 and 2012. A parallel Rasch analysis was also used to maintain the difficulty of the written examination in 2012, based on linking to item performance in the 2011 exam.

Summary of results: The 2011 exam showed reasonable fit to the Rasch model. For the 2012 exam, the model fit and comparison of results of the two approaches to the standard setting will be discussed.

Conclusions: It might be possible to move to a Rasch-calibrated item-banking system where standards are maintained using Rasch estimates of item difficulty.

Take-home messages: Judgement based standard setting methods are time consuming and are subjective. Rasch-based methods might provide a more robust, objective and defensible alternative.

4E/6
Identification of formal mistakes and cueing by automatic review algorithms

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Background: Although formal mistakes and cueing are quite often in MC-questions (MCQs), support in the identification of conspicuous items by automatic algorithms is rarely known. This support is given by the web-based Item Management System (IMS), an all-in-one platform to facilitate all steps in the workflow of assessment and to provide special features for quality assurance. IMS was developed to deepen inter-faculty collaboration between the 26 faculties of the Medical Assessment Alliance.

Summary of work: For analyzing formal quality of MCQs we developed several criteria for automatic review algorithms and implemented these within the IMS. These algorithms include the identification of cueing aspects like the existence of significant length differences, double negations, word repetition, similarity of answer options etc..

Summary of results: The analysis of 10 000 MCQ items showed that defined automatic review algorithms are helpful to identify a various number of flaws in MCQs. Perspectives and limitations using these algorithms will be presented.

Conclusions: The IMS supported algorithms are an efficient pre-screening tool to support the user in selecting items for an individual review process and give hints for improving items, which are intended to be used in an upcoming examination.

Take-home messages: Authors and reviewers of MCQs can be supported efficiently by automatic review algorithms.

4E/7
Affective aspects of corrective feedback

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Background: Feedback has been identified as a key element of growth and learning. Training in providing feedback focuses on the communication techniques of delivering feedback ('sandwich' method). Affective aspects of critical feedback are rarely addressed leaving trainer under resourced to effectively deal with their own discomfort. This can inhibit corrective feedback process. This study aims to examine trainer's perception of the importance of affective aspects of corrective feedback.

Summary of work: A 17 item questionnaire designed to examine trainers' perceptions was submitted to trainers of varying experience levels.

Summary of results: 61% with over 5 years experience; 66% indicated that feeling uncomfortable didn't inhibit them; 70% indicated traditional feedback techniques aren't enough; 70% indicated that feelings are relevant; 80% indicated own memorable feedback received was emotionally significant; 90% indicated feeling most uncomfortable providing feedback to peers/senior trainees, at summative stage, when trainee is consistently underperforming and when given in person.

Conclusions: Affective aspects are relevant to corrective feedback process. Trainers feel equipped to deal with affective aspects indicated when they feel most uncomfortable.

Take-home messages: Train-the-trainer and teaching skills courses could be improved and enhanced by adding affective-related aspects to feedback module, including identifying feelings, their physical manifestations, normalise the process and identifying associated behaviours/cognition that can hinder/assist the process.

4E/8
Equating computer tests in small samples - case study in pharmacology

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Background: Recent methods for equating in small samples of test takers have been developed. However few studies have been done on the results of those methods in the real-world conditions of summative evaluation.

Summary of work: 82 students took in the same day two computer-based tests on Pharmacology (50/32 students). Each test had 70 multiple-choice standard questions and 30 extended-matching questions. Several equating methods were applied to the scores using designs of equivalent and nonequivalent groups. Twenty-one questions (anchor items) were common to both tests.

Summary of results: Test A was significantly easier than test B (62%/53%, p=0.036), however there were no significant differences in difficulty between both tests in the anchors

(54%/50%, p=0.301).

The standard errors of equating showed that the smaller sampling variability was obtained with the linear Tucker method in middle of the distribution and with the chained circle-arc method in the extremes of the distribution.

Conclusions: Even when good item writers try to carefully develop equivalent computer forms of the same tests, different levels of difficulty may occur. The best equating method depends on the location of the distribution.

Take-home messages: The use of correct equating method even in small samples can adjust for the differences in the levels difficulty of different test forms.

4F PhD Reports 1

4F/1
At-risk medical students: characteristics and possible interventions

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Introduction: Medical schools worldwide seek measures to improve their students' progress. Lack of study progress can be seen as the result of a mismatch between the student and the academic environment [1]. Thus, to prevent student delay, medical schools need to identify students who are experiencing academic difficulties and to provide them with timely intervention through access to support programmes. Although the importance of early identification and intervention is well recognised, less is known about successful strategies for identifying and supporting underperforming students [2]. This thesis addressed two main research questions. Q1: What are risk factors for underperformance at medical school, and Q2: What can medical schools do to improve their students' progress?

Methods: Three empirical studies focused on risk factors for underperformance (Q1). Study 1 used routinely collected data on students' background and study behaviour, such as gender, age, pre-university Grade Point Average and exam participation, to identify and characterize underperforming first-year students. Study 2 collected data on ethnicity and additional social-demographic variables to investigate underperformance across ethnic minority groups in undergraduate preclinical and clinical training. Study 3 focused on the relation between motivation, learning strategies, participation in scheduled learning activities and first-year performance. Data for study 2 & 3 were collected by questionnaires and data were analysed using logistic regression and structural equation modelling techniques. Study 4 & 5 focused on how to support students (Q2): study 4 determined the effect of an academic dismissal policy on study progress using historical controls, and study 5 used a randomised controlled trial design to measure the effect of a short integrated study skills programme on the study progress of at-risk medical students.

Results: Study 1 distinguished three types of at-risk students: students with low exam participation rate and low success rate (17%), students with high exam participation rate and low success rate (9%) and capable students who start slowly (75%). Study 2 found that in preclinical training only two out of four ethnic minority groups underperformed in comparison to majority students, while in clinical training all four ethnic minority groups received lower grades, even after adjusting for students' background variables. Study 3 suggested that higher levels of motivation and learning strategy use only positively influence first-year performance if combined with high levels of participation. In study 4 we found that the implementation of an academic dismissal policy did not lead to earlier dropout, higher completion rates or an improved study rate during the first two years at medical school. However, participation in offered support increased from 40% to almost 70%, and participants more often completed their first-year programme in time. Finally, study 5 showed that the short, integrated study skills programme only benefitted the relatively better or more committed at-risk students.

Discussion: This thesis offers insight into which students are most at risk and what medical schools could do to help them. The results make clear that participation is conditional for success. The advice for medical schools is to focus their support efforts on the more committed at-risk students.

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4F/2
Motivation in medical students

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Introduction: The importance of motivation in learning behaviour and education is well-researched and proven in general education, but much less in medical education. There is sometimes focus on increasing the quantity of motivation, but the how and why need more evidence. The aims of this thesis were to gather insights and investigate medical students' motivation, particularly the importance of quality of motivation, factors influencing and outcomes and to explore how these can be applied to make medical education better suited to support motivation. The main research questions were:
1. Is motivation a predictor for learning and academic performance in medical students?

2. What factors affect motivation?

3. How can intrinsic motivation be stimulated among students?

Methods: The literature on development of medical education curricula was reviewed to explore whether these developments were geared towards stimulating student motivation. The literature was also reviewed to determine how motivation was investigated as a dependent and an independent variable in medical education. The validity of a scale (SMMS1) to measure the strength of motivation for medical school was investigated. Two research studies investigated motivation as an independent variable, the relationships of student motivation with their learning strategies and efforts and their academic performance were investigated through structural equation modeling analysis and cluster analysis. An approach towards investigating motivation, which combined quantity and quality of motivation, was proposed. As a dependent variable the relationships of age, maturity, gender and educational background with motivation were investigated through multiple regression analysis. Applications of this research were described and recommendations were made.

Results: 1. Developments in medical education appear to have undervalued student motivation.

2. Motivation is an independent variable in medical education and intrinsic motivation is significantly associated with deep study strategy, high study effort and good academic performance.

3. Motivation is also a dependent variable in medical education and is significantly affected by age, maturity, gender, educational background, intrinsic motivation is specifically enhanced by providing students autonomy, feedback about competence and emotional support.

4. Strength of motivation for medical school can be reliably measured by SMMS1 questionnaire.

Discussion: Student motivation has been given low consideration in medical education as indicated by the gap in the literature on this topic. Medical curricula have undergone major reforms, but these reforms are not geared towards enhancing student motivation. An approach towards studying motivation in medical students is to give importance to both, the quality and quantity of motivation. Intrinsic motivation (learning for the sake of learning) as compared to extrinsic motivation (learning for reward), leads to better learning and performance. Intrinsic motivation can be enhanced by providing students with autonomy in learning, feedback on their performance and emotional support.

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4F/3

Diagnostic palpation in osteopathic medicine: A putative neurocognitive model of expertise

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Introduction: Osteopaths make perceptual judgments regarding the presence of somatic dysfunctions based on information conveyed by their senses. Notwithstanding this, in the diagnosis of somatic dysfunction, osteopaths engage in a series of other cognitive processes such as the encoding and retrieval of diagnostic information, mental imagery, reasoning, and decision making. These cognitive processes are all likely to play important and synergistic roles in their diagnostic decision making. This thesis examined the extent to which the development of expertise in diagnostic palpation in osteopathic medicine is associated with changes in cognitive processing.

Methods: A total of six studies were conducted. Two exploratory studies examined the mental representation of knowledge and the role of analogical reasoning in osteopathic clinical decision making. Four additional studies investigated the way in which expert osteopaths use their visual and haptic systems in the diagnosis of somatic dysfunction.

Results: The results from the two exploratory studies demonstrate that the development of expertise in osteopathic medicine is associated with the processes of knowledge encapsulation and script formation.The results from the other four studies suggest that ongoing clinical practice enables osteopaths to combine visual and haptic sensory signals in a more efficient manner. Such visuo-haptic sensory integration is likely to be facilitated by top-down processing associated with visual, tactile, and kinaesthetic mental imagery. Taken together, the results of the six studies reported in this thesis indicate that the development of expertise in diagnostic palpation in osteopathic medicine is associated with changes in cognitive processing. Whereas the experts' diagnostic judgments are heavily influenced by top-down, non-analytical processing; students rely, primarily, on bottom-up sensory processing from vision and haptics. Ongoing training and clinical practice are likely to lead to changes in the clinician's neurocognitive architecture.

Discussion: This thesis proposes an original model of expertise in diagnostic palpation which has implications for osteopathic education. Students and clinicians should be encouraged to appraise the reliability of different sensory cues in the context of clinical examination, combine sensory data from different channels, and consider using both analytical and non-analytical reasoning in their decision making. Importantly, they should develop their skills of criticality and their ability to reflect on, and analyse their practice experiences in and on action.

4F/4

Teaching and Learning Clinical Skills: Mastering the Art of Medicine

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Introduction: Clinical skills are crucial tools for diagnosing patients. Most universities use specifically designated teaching facilities (Skillslabs) to prepare students for patient encounters. Evidence on teaching in these centers is lacking. It is unknown how students try to improve their skills outside time-tabled training sessions. The role of the clinical environment on their learning remains unclear. The main objective of this thesis was to explore how students acquire clinical skills. In order to investigate how learning and teaching activities influence this process, we focused our studies to several dimensions of students' development. Our main research questions were: -How do students learn clinical skills trough their undergraduate training programme? - What factors stimulate and what factors hinder their development?

Methods: Reviews of the relevant literature provided the basis for five empirical studies. Two qualitative studies used a grounded theory approach to explore the role of skills teachers during training sessions from the perspective of both teachers and students. A subsequent quantitative study investigated activities students undertake outside these time-tabled sessions to improve their clinical skills, which was expanded with a qualitative study. Finally, we focused on learning during the clinical rotations through a qualitative study based on focus group discussions.

Results: Our first studies lead to the identification of distinct characteristics, attitudes and behaviours of effective clinical skills teachers. We distinguished didactic strategies that stimulate student learning. Students reported a variety of activities to improve their clinical skills outside time-tabled sessions. On average, students devote 20% of self-study time to skills training with Year 1 students practicing significantly more than Year 3 students. Practice patterns shift from just-in-time learning to a longitudinal self-directed approach. Factors influencing this are assessment methods and simulated/real patients; they provide strong incentives to work on skills. A comprehensive literature review showed that evidence of types of skills that are acquired in workplace learning vary in quality and quantity. Data on how they are acquired and what factors influence the learning process is lacking. Our qualitative study revealed that learning skills in the clinical workplace is based on a complex interplay of the student's learning attitude, the culture of the learning environment and the availability of supervision.

Discussion: The results of this thesis contribute to a better understanding of how students learn clinical skills. Our studies on learning in the Skillslab provide useful information for faculty development programmes, and can help clinical skills teachers improve the effectiveness of their training sessions. Our studies on learning outside time-tabled training revealed strategies that students adopt to master clinical skills: our findings support early introduction of skills training in medical education and vertical integration within the curriculum. Longitudinal integrated skills training could facilitate a student's ability to perform these skills in the clinical workplace. As our final studies revealed, learning in this setting is complex and includes dynamic tensions that are inhibiting student progress.

Conclusions: Our findings can be used to improve the quality of learning during clinical rotations as well as the level and nature of support and supervision.

4F/5
Building a theoretical framework to support the design of effective patient safety education: The SECTOR model

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Introduction: Patient safety has become an increasingly important issue in healthcare over the last two decades. Despite recent efforts to improve patient outcomes, figures from the UK National Patient Safety Agency demonstrate the continuing scale of the problem. A large proportion of educational improvement programmes are focussed on specific clinical issues, so called quality improvement(1). Educational innovation on human factors or non-technical skills to enhance patient safety is limited by a lack of clarity as to the theoretical underpinnings of such instructional design. I set out to synthesis a theoretically underpinned model for patient safety education to support future educational design.

Methods: A pluralistic programme of investigation was used to support the synthesis of a model of patient safety education. Where subjects were involved, ethical approval was received. Evidence synthesis was completed through systematic review of published studies pertaining to education to enhance handover of care(2) and non-technical skills. A qualitative investigation of prescribing behaviour amongst recent medical graduates was completed to test the appropriateness of candidate theories and synthesis a model of prescribing safety behaviour. The use of prescribing error awareness as an educational safety improvement tool was investigated on a paediatric inpatient unit through a programme of continuous error feedback of anonymous data on prescribing error posters.

Results: Systematic review of handover of care(1), found that current guidance was lacking and professionals felt unprepared and poorly trained. Qualitative review of the interventions allowed several theories to be proposed as the conceptual basis of such education: information management, communication and error awareness. The further review of non-technical skills training revealed the importance of multidisciplinary team work training and content themes related to situational awareness. Analysis of data from the study of recent medical graduate's behaviour revealed key themes related to: Contributors to adequate and inadequate prescribing, Professional responsibility, Impact of error and Methods of prescribing improvement. Utilizing appropriate conceptual frameworks, we have been able to describe how recent medical graduates employ situational and error awareness, together with their own sense of professional responsibility, to guide a process of risk assessment. Finally, the introduction of a contemporaneous system of error feedback on a paediatric ward led to a statistically significant reduction in the error rate (p

Discussion: This programme of investigation has led to the synthesis of the SECTOR model, a theoretically-grounded framework to guide patient safety education. SECTOR is a mnemonic which stands for 3 key elements: - Knowledge and skills in core areas (Systems and technology use, Error

awareness, Communication, Teamworking), a situated cognition approach to formal and experiential learning (Observation and simulation) and enhanced safety through behaviour change (Risk assessment and situational awareness). Further investigation is now required to assess the validity of this model and ascertain its utility in instructional design.

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4G Research Papers: Discourse Analysis

4G/1
One word, many uses: A discourse analysis of 'integration' in medical education

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Introduction: Integration is an important construct in medical education, as links between various educational experiences are understood to enhance learning. Educators look for ways to increase integration within and across health professions education. The current uses of the term 'integration,' however, are diverse and multifaceted. To understand the implications of this diversity, our research explored how the term 'integration' is conceptualized and used in Canadian medical education contexts. Using a critical social science theoretical framework, we analyzed discourses of integration to answer the research question: what are the current discourses of integration in Canadian medical education and how do they intersect in the conception and design of medical education interventions?

Methods: We conducted a Foucauldian critical discourse analysis of the construct of 'integration.' We assembled an archive of close to 400 primary and secondary texts published within the past 10 years. A purposive sampling approach was used to assemble and delimit the archive. Specifically we included institutional reports and documents, and articles from major medical education journals and Canadian medical school and professional society websites to locate documents that communicated a rationale for more or a different kind of integration. In our analysis we looked for key words, statements and metaphors associated with integrating (such

as linking, connecting, merging, blending etc.) that appeared with regularity in institutional and individual statements describing educational initiatives. These were used to identify and describe a set of discrete discourses of integration currently in use in Canadian medical education contexts.

Results: Distinct discourses of integration were identified that were significant for their impact on curriculum organization, reform, development and delivery, and which were supported by an empirical evidence base. The discourses fell across two dimensions: conceptual and applied. In the conceptual category integration related to the merging of knowledge across disciplines (basic, social and clinical), to the construction of expertise (competencies) and to innovation. In the applied category, integration signalled structural alignment across the medical education continuum (i.e. undergraduate, postgraduate and continuing education); integration of academic health science centres and community-based education; interdepartmental integration (ie integrated clerkships); and integration of curricula across health professions.

Discussion: Education agendas are highly political because they relate to changes in the way both resources and obligations are distributed. Our findings showed that each identified discourse held different implications for medical education training. Further, our analysis showed that competing rationales including efficiency, standardization, inclusivity and diversification were often pursued simultaneously. For example, integration of education into clinical service while optimizing the time spent teaching in busy clinical settings is rationalized as a way to improve the teaching of basic science knowledge. Such rationales draw efficiency mandates into educational priorities with implications for both service and learning.

Conclusions: Understanding multiple meanings and uses of important terms on medical education allows educators to be more focussed on their desired educational goals. Integration is an important construct that is used in varied ways. Discursive analysis of the differing meanings and uses of the term 'integration' provides both conceptual clarity and practical utility for the design and implementation of integrated educational interventions.

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4G/2
Theoretically Pure Thoughts or Methodological Promiscuity? A Discourse Analysis Case Study in Medical Education Using Complementary Conceptual Lenses

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Introduction: We report on the results of a preliminary discourse analysis undertaken of the websites of Canada's 17 medical schools, in which we looked at the key concepts of 'excellence' (both institutional and in potential medical students), 'diversity', and 'equity'. Medical School websites can be used as promotional tools, advancing arguments to claim institutional excellence and appealing to the 'best and

the brightest', who might join such institutions as medical students. We were interested in what these texts said about 'excellence' and how social accountability discourses, such as those related to 'diversity' and 'equity', were represented. We sought to enhance our interpretive understandings in this work by analyzing the data through the conceptual lenses of 3 social theorists (Foucault, Bourdieu, and Bakhtin), and report on this specific process in this paper. Methodologies aimed at combining theoretical lenses in this manner have variably been called 'theoretical triangulation', 'complementarity', and even 'bricolage'. Such approaches are not without critics, and the researcher in qualitative inquiry in medical education seeking to work with multiple theorists must be aware of these issues when doing so.

Methods: Text datasets included medical school website "welcome" pages and Deans' messages, and pages specific to students applying to medical school (in English or French, all Canadian Medical Schools). We examined these identified texts independently through the lenses of the three social theorists: Foucault (knowledge-power relations), Bourdieu (forms of capital), and Bakhtin (voice and dialogism). We then critically and reflexively compared the interpretations obtained through each theoretical lens, as we sought to develop a common understanding of the meanings emerging from the texts.

Results: Institutional prestige and applicant suitability were generally promoted through discourses of excellence (research, innovation, & global positioning). Diversity discourses emerged primarily as appeals to institutions' 'cosmopolitan sophistication'. Equity was vaguely defined.

Discussion: Appreciating the texts through the three theoretical lenses did allow for deepened understandings of the discourses present on the websites. Through the Foucauldian lens we were able to understand definitions of institutional excellence in terms of knowledge-power relationships ("value"). Through the Bourdieuvian lens, we were able to appreciate how "value" might translate into "capital" required for competitive prospective applicants to medical school. Finally, through the Bakhtinian lens we were able to understand how "transactions" of "value" and "capital" might occur through the use of language and voice.

Conclusions: Qualitative inquiry rests upon the tenets of textual interpretation, in which the researcher-subject engages in an interaction with a text and its author(s), ultimately resulting in an interpretation of meaning through a chosen theoretical lens. How might the interpretation of meaning in texts (with 'text' broadly defined as all forms of symbolic representation) be enhanced? In this work, we outline the approach of performing the inquiry using multiple theoretical lenses for the textual interpretation, seeking deepened understandings through the comparisons of the interpretations. We posit that this approach has the potential to enhance our interpretive understandings, which, in turn, may assist with the generalizability and resonance of the work within the medical education community.

4G/3
Enhancing the Quality Improvement Outcomes of the CCO HPB Community of Practice

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Introduction: A community of practice (CoP) is defined as a formal or informal group of people who share an interest, a craft, and/or profession with a shared goal of sharing and gaining knowledge related to their field[1]. This concept was conceived in the education literature related to situated learning, however, CoPs are increasingly being adopted in healthcare as quality improvement initiatives[2, 3]. The Cancer Care Ontario Hepatic, Pancreatic and Biliary Tract Community of Practice (CCO HPB CoP) is a surgical quality improvement intervention formed along shared priorities, research agenda and the dissemination of clinical guidelines. It was created in 2007, in the wake of the provincial regionalization of HPB services, to provide organizational support to surgeons and institutions involved in HPB surgery. This study examines the relationship between the quality improvement and educational aspects of the CCO HBP CoP to gain insight into the (un)intended impacts of regionalization and the CoP on clinical practice and continuing medical education.

Methods: This exploratory qualitative study employs an interpretivist framework to gather in-depth interview accounts of participants' perceptions and experiences of their early and current involvement in the CCO HPB CoP. The study also triangulates the data with a discourse analysis of documents related to the CCO HPB CoP. The triangulated data analysis is guided by two theoretical literatures: CoP and sociology of professions.

Results: The conception of the CCO HPB CoP is closely tied to the regionalization of HPB surgery across Ontario, based on volume outcomes hypothesis. As such, studying the CoP provides insights into the (un)intended impacts of regionalization on clinical practice and the effectiveness of a CoP as a quality improvement and continuing medical education intervention in surgery. Three key inter-related themes were found: 1) Wide variation in the understanding of and participation in the CCO HPB CoP by HPB surgeons in Ontario; 2) structural, economic and cultural factors influenced participation in the CCO HPB CoP; 3) An operational tension exists between the twin purposes of the CCO HPB CoP as a regionalization/rationalisation activity based on the volume/outcome hypothesis, and as an educational intervention to enhance and maintain competence in HPB surgery.

Discussion: The variation in (non)active member participation in the HPB CCO CoP is related to how the intervention was operationalized. The CCO HPB CoP was a rationalization activity, supported by a governing organization, and not necessarily by all the members of the professional group being governed. This, in combination with the perception that asymmetrical power relations between the HPB centres were intensified through regionalization, directly impacted on members' clinical practice and participation in the CCO HPB CoP.

Conclusions: Active participation in, and shared understanding of a CoP by its members is important to sustaining an operationally effective CoP. The results from

this study suggest that greater participation in the design, organization, implementation and management of a COP by both core and peripheral members of the targeted professional group, is required to ensure its' sustainability and effectiveness.

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4G/4

Trends in doctoral education among healthcare professions in the United States

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Introduction: Although professional education was once tied to academic degrees, there has been a steady move away from the academic model to a professional education model among all health professions. Concomitant with these changes are trends toward an environment of inter-professional teamwork, greater depth and breadth of specialty knowledge, demand for evidence-based practice, increasing cost of higher education, and decreasing health care dollars. This systematic review was guided by the following research questions: What doctoral education models are currently utilized among healthcare professional education programs in the United States? How do entry-level clinical doctorates in healthcare professions impact research training and productivity? How do clinical doctorates among health professions influence practice opportunities and salary?

Methods: Data on professional accrediting standards, admission requirements, and doctoral curricular standards were extracted from professional organization and accrediting body websites. Income data for various health professions was extracted from the US Department of Labor database. A search of 38 databases in the University of Washington libraries including WorldCat, ERIC, ArticleFirst, MEDLINE, BioMed Central, ScienceDirect and Academic Search Complete. Search criteria limited results to full-text articles published in English between the years 2001-2011. Articles related to gender studies, minority representation, student success prediction modeling, nutrition, learning styles, management, educational leadership, continuing education, social work, business management, complementary and alternative therapies, international healthcare education, and technology literacy were subsequently excluded along with editorial and commentary articles. The remaining article abstracts were reviewed for compatibility with our research questions and, as applicable,

included in our review. Data were extracted using a standardized rubric and coded according to emergent themes.

Results: Two-thirds of examined health professions (n=10) follow the 'medical model' of post-baccalaureate entry-to-practice professional doctoral education. Less than a third (n=4) of surveyed professions reserved doctoral-level education for advanced practice, and one profession maintains both entry-level and advanced practice doctorates. Entry-level clinical doctorates provide insufficient specialty training, necessitating further training after graduation. Only 4 of the 15 clinical doctoral degrees required completion of an original research project.

Discussion: Analysis suggests that entry-level clinical doctorates lack sufficient research training for robust scholarship to support evidence-based practice. Professional doctorates are perceived to increase practice opportunities, professional standing, depth and breadth of learning and curricular space. Increased cost of doctoral level professional education may increase ethnic and socioeconomic disparities and decrease workforce diversity. Salary trends indicate that professions with professional doctorates are associated with higher salaries, though probably related to billable services provided and not the degree itself.

Conclusions: Most healthcare professions follow the 'medical model' for professional preparation, though at reduced intensity with fewer clinical hours than physician training. Clinical doctorates are perceived to increase professional opportunities and are associated with higher salaries. Doctoral education among healthcare professions have become the new educational standard, though research training, research productivity, diversity, and professional debt burden have been negatively impacted by this trend. Various strategies could be employed to incorporate clinical research training into existing professional and post-professional doctoral programs.

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4H Short Communications: Leadership

4H/1

Implementation of the Medical Leadership Competency Framework in Undergraduate Education in the UK: A Survey of Medical Schools

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Background: The Medical Leadership Competency Framework (MLCF) became a requirement upon U.K. medical schools following its incorporation into Tomorrow's Doctors by the GMC in 2009.
Summary of work: Progress in implementing the MLCF has been uneven and approaches in terms of coverage, method and assessment varied. This paper reports on a survey of all medical schools in the U.K. conducted in 2011/2012.
Summary of results: A 78% response rate was achieved and the results suggest that there are outstanding examples which could (and will) be used as exemplar case studies. However, in other institutions there has been little progress. The survey results describe different educational methods, different patterns of integration or separation from other parts of the curriculum and which aspects of the MLCF appear to be most relevant to undergraduate provision. Significant barriers such as available tutor expertise, timing of curriculum review cycles and uncertainty about the assessment process.
Conclusions: The paper discusses how the case studies may be used, in conjunction with the GMC review process, to suggest ways in which a more consistent level of implementation might be achieved.
Take-home messages: How to improve implementation of the MLCF.

4H/2

How can current assessment methods in undergraduate medical education be changed to test leadership and management abilities?

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Background: The GMC's Tomorrow's Doctors (2009) states that future doctors must be capable of demonstrating both leadership and management skills in healthcare decisions. With a greater push for medical schools to incorporate these into their curricula, this study investigates how the traditional assessment methods must be changed to develop these skills amongst students.
Summary of work: Twenty-eight semi-structured interviews were conducted with both students and teaching staff at Imperial College School of Medicine, with questions relating to the current assessment methods employed and recommendations for future changes to assess leadership and management competencies.
Summary of results: Current assessment methods predominantly had an underlying knowledge component, encouraging rote-learning largely due to formulaic marking systems given the scientific nature of the medical curriculum. Recommendations included introducing reflective learning, feedback tools, projects and simulations to aid students to self-evaluate, critically appraise and gain personal insight.
Conclusions: Traditional assessment methods were not perceived to encourage lateral thinking, with a focus instead on assessing the acquisition of the relevant knowledge base. Empowering students to demonstrate leadership competencies must therefore be reflected in the assessment methods.
Take-home messages: Tools to do so already exist in other disciplines. Transferring these into the core medical curriculum will certainly help to develop these skills in future medical students.

4H/3

Leadership as a Core Curriculum Subject in Undergraduate Medical Education : A Purposive Intervention Towards Professionalism at the Ateneo School of Medicine and Public Health

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Background: The Ateneo School of Medicine and Public Health aims to graduate doctors who will lead systemic changes in Philippine Health Care through an integrated MD-MBA curriculum. To fulfill this vision, a formal Leadership Course was included in the core curriculum.
Summary of work: The conceptual framework of the leadership curriculum emphasizes the development of self-mastery, discernment and decision making- traits recognized as integral to the development of high ethical and professional standards in practice. The course unfolds through classroom sit-down sessions, experiential learning, exposure to identified doctor leaders and self reflection. Leadership is a graded subject and is augmented by non-graded mentoring sessions and ethics rounds.
Summary of results: Through a combination of teaching-learning activities, students demonstrate an innate capacity to analyze ambivalent situations encountered in training, from the classroom to the clinical setting. Faculty mentoring and coaching notes combined with students' reflection papers are collected in a portfolio for purposes of feedback and self-tracking of growth.

Conclusions: Purposive inclusion of leadership and mentoring in the core curriculum develops a stance of reflective learning in medical students and can help improve professional behavior in practice.

4H/4
Medical leadership and management training for post-foundation doctors

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Background: All doctors are now expected to have a good understanding of leadership and management in the NHS.
Summary of work: This paper describes an ongoing groundbreaking and ambitious project delivering training in medical leadership and management, developed jointly in 2010 by the East Midlands Healthcare Workforce Deanery and Warwick Medical School, to 2,500 post-foundation doctors. The Medical Leadership Competency Framework forms the basis of the curriculum, supported by e-resources.
Summary of results: There are 5 Levels of training, trainees moving up a Level each year. Delivery is by seminar, group learning, lectures, and self-directed learning. All trainees are expected to submit a written assignment each year relating to leadership in the work setting, marked by experienced teachers. These assessments are formative, not summative, to be used at appraisal. A dedicated interactive website supports all stages of the programme including teaching evaluation, assignment submission, marking, and certificates of attendance and completion.
Conclusions: The findings of evaluations will be presented and issues associated with the project development will be discussed; generally the project has been very well received and very favourably evaluated by all concerned, especially trainees.
Take-home messages: Training in medical leadership is now an essential part of doctor education and can be incorporated successfully into postgraduate educational programmes.

4H/5
Learning leadership and collaborative working through a pairing scheme for Foundation doctors and graduate management trainees

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Background: Effective clinical leadership is essential to maintain and improve patient care and the Foundation curriculum highlights the need for trainees to develop leadership skills. Inherent in good leadership is collaborative working with other professional groups in order to effect improvements in patient care, and learning to be a good leader is best fostered by experience rather than through learning leadership theory.
Summary of work: This paper reports on an ongoing project in which 12 management trainee and foundation doctors pairs work together to undertake a patient care improvement project. The pairs are supported in their collaborative project by regular facilitated action learning sets and are mentored by a leadership tutor in the clinical setting.
Summary of results: Observations from the participants, learning sets and tutors confirms participants have improved their understanding of clinical leadership and the benefits of collaborative working.
Conclusions: This project provides evidence that undertaking a patient care improvement project with support from both a facilitated action learning set and leadership tutors in the workplace can improve collaborative working and the leadership skills of both medical and management trainees.
Take-home messages: Pairing management trainees and trainee doctors and supporting them to undertake a patient care improvement project together aids collaborative working and other leadership skills

4H/6
Self And Peer-Assessments of Emotional Intelligence: Fostering Leadership in Medical Educators

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Background: New paradigm approaches for leadership lay emphasis on self-reflection, emotions, values and openness to experience for developing 'leadership from within'.
Summary of work: RQ: What is the level of concordance between self and peer-assessments for emotional intelligence reflected as leadership attributes? Associational research approach, using cross-sectional study design was employed to collect data. Through non-probability purposive sampling, a total of 17 participants were included in the study who had completed the 'Leadership module'.
Summary of results: The response rate for study was 77.27%. Using Kendall's rank-order correlation coefficient in SPSS-17, level of concordance between self and peer-assessments was calculated as 47% (n=8; 80% in males; 75% in ≥45 years of age) positive and 41% (n=7) negative concordance. Only two participants (25%) had correctly self-assessed scores for complementary components of emotional intelligence (p=<0.05). This infers that correct and adequate insight for one component, as self-awareness, leads to appropriate self-assessment for the other, self-management (p=0.03); similarly for social awareness and social skills (p=0.01) in another participant.
Conclusions: Low concurrence in majority of cases between self and peer-assessments of various aspects of emotional intelligence suggest the need for further training with

feedback for improvement of emotional intelligence for effective leadership roles.

Take-home messages: Great leaders have high degree of emotional intelligence.

4H/7
Professional development needs of Department Chairs

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Background: Department chairs face additional challenges than their regular faculty counterparts, and might benefit from professional development targeted to their role. The literature reports only a few curricular descriptions, not directly applicable to non-US contexts. This study sought to determine the development needs of Department Chairs in a Canadian context.

Summary of work: Current and former (within 5 years) Chairs were surveyed on 30 potential development topics. Former Chairs were also asked for factors enabling chairs to attend the planned activities. Descriptive analyses were performed with measures of frequency for each topic, cross-tabulated by Chair status (current vs. former). Significance and strength of potential relationships were analyzed with χ-square, Phi, Cramer's V and contingency coefficients.

Summary of results: Response rates were: current Chairs:78% (14/18); former Chairs:69% (11/16). High-priority topics included: 'Presentation/discussion of effective/ineffective Department Chair practices' (86%), 'Conflict management/resolution' (79%), 'Leadership effectiveness' (71%), 'Effective/challenging communications' (71%). Priority rating did not differ between former and current Chairs. Several enabling factors were identified including 'topic relevance', 'making participation a performance evaluation expectation', 'tying the series to current needs'.

The main study limitation resides in the small number of participants, intrinsically restricted by the size of our organization.

Conclusions: Specific development needs were identified for chairs, along with factors enabling participation.

4I Short Communications: Outcome Based Education/Competency Based Education 1

4I/1
Towards a competency-based curriculum: the focus of undergraduate medical education curriculum renewal at the Université de Sherbrooke

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Background: Current trends in undergraduate medical education point towards the use of a competency-based framework. Curriculum renewal at the Université de Sherbrooke focuses on aligning the training of future physicians with this perspective.

Summary of work: Impetus for renewal stemmed from current literature regarding medical education reform and a local situational portrait based on multiple consultations with different stakeholders. Inspired by Stufflebeam's CIPP model (2003), needs, opportunities and threats were defined, general orientations and actions selected, and implementation scenarios drafted.

Summary of results: Six broad orientations that will shape the curriculum and student assessment were identified through this process: 1) acting with competency 2) generalism 3) de-compartmentalization, 4) interprofessional collaboration 5) flexibility 6) comprehensive and coherent administration. Regular communication with program committees and large group consultations with faculty were put in place to maximize interaction with key stakeholders throughout the process.

Conclusions: Through a process of rigorous baseline evaluation, clear strategic orientations and early implication and mobilization of stakeholders, significant changes to a curriculum, including those necessary to implement a competency-based framework can be designed.

Take-home messages: Six broad orientations will guide curriculum renewal at the Université de Sherbrooke aligning undergraduate medical training with a competency-based framework.

4I/2
Introduction of medical students to CanMEDS competencies through an experiential case-based learning project

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Background: The CanMEDS competencies are an internationally-recognized framework of essential roles needed for optimal health care outcomes. The roles are medical expert, communicator, collaborator, advocate, professional, scholar, and manager. Undergraduate medical education focuses primarily on the medical expert role.

Summary of work: An educational activity has been developed and implemented to expand fourth (last) year medical students' awareness of the CanMEDS roles as they approach the end of their undergraduate medical education and prepare to begin residency in a large medical school in Canada. To achieve this objective, students undertaking a three-week clinical rotation in an internal medicine subspecialty are asked to reflect on the rotation through the lens of one of the CanMEDS roles. To facilitate reflection, they are asked to recount a case-based experience in a two-page composition and to share the account orally with a group of their peers and an instructor.

Summary of results: Medical students' "discovery" of the CanMEDS roles exhibited by themselves or a preceptor in a clinical encounter provides the starting point for a more in-depth exploration of a CanMEDS competency. Discussion among their peer group during the oral presentation leads the students to a more sophisticated understanding of all the CanMEDS roles.

Conclusions: Medical students' awareness and understanding of the CanMEDS roles can be increased by explicitly asking them to view clinical encounters through the CanMEDS framework and discuss them with their peers.

Take-home messages: CanMEDS roles can be successfully introduced into the undergraduate medical curriculum using an experiential case-based learning project.

4I/3

The Australian Collaboration for Clinical Assessment in Medicine (ACCLAiM). Benchmarking graduate clinical skills: assessment processes and outcomes

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Background: Australia's 19 medical schools produce graduates that demonstrate the profile of attributes defined by the Australian Medical Council. There is little empirical evidence that demonstrates the extent to which graduates from different institutions meet that profile.

Summary of work: ACCLAIM is a collaborative venture between four medical schools in Australia: Deakin University (DU), James Cook University (JCU), University of Tasmania (UTAS) and the University of Wollongong (UOW). The broad goals of ACCLAiM are (i) quality improvement through sharing of resources and expertise, (II) benchmarking of graduate outcomes across courses, and (iii) development of new approaches to improve efficiency and capacity of assessment systems amongst the collaborating schools.

Summary of results: Members of ACCLAiM offer 5-year and 6-year undergradautes courses and 4-year graduate entry

courses. The ACCLAiM partners met to discuss course expectations and outcomes, share blueprints, establish common OSCE examination stations and criteria and plan activities over the assessment cycles of each course. External examiners were also shared across the partner sites. Data were shared amongst partners and collaboratively reviewed and analysed.

Conclusions: The ACCLAiM collaboration has generated benefits for all parties involved. These include the sharing of resources, the awareness of partner processes and subsequent improvement of internal processes. Results of the assessment activities have encouraged partners to review their curriculum and seek improvements.

Take-home messages: Benchmarking of graduate clinical outcomes across medical courses is complex but achievable. Quantitative data generated through the process have encouraged self-reflection and qualitative improvement in partner courses.

4I/4

Identifying common graduate learning outcomes across healthcare professions

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Background: In Australia there are no formally agreed common learning outcomes for healthcare graduates although clear relationships exist between individual disciplines. This project was undertaken to identify a set of threshold learning outcomes that all professional entry-level healthcare graduates should achieve.

Summary of work: The accreditation standards/competencies for new graduates in 26 different Australian healthcare disciplines (including medicine, dentistry and nursing) were compared to identify common content domains. Seventy healthcare councils of deans, and professional and accreditation bodies were consulted together with over 950 academics.

Summary of results: Six overarching 'threshold learning outcomes' were identified. Professional accreditation standards/competencies for all 26 disciplines were successfully mapped to one of the six threshold learning outcomes with no additional categories required.

Conclusions: These threshold learning outcomes provide an ideal basis for cross-disciplinary engagement and collaboration in the further development of healthcare student education.

Take-home messages: Across a wide range of healthcare professions, a common set of core or threshold learning outcomes have been identified that can be used to foster interdisciplinary dialogue and collaboration.

4I/5

A challenge for professional influence on syllabi in medicine and nursing

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Background: The movement towards outcome-based curricula, as in the European Bologna reform, has given formal curricula increased importance: learning outcomes are made explicit. Traditional channels for professional influence on educational programs may thus be challenged.
Summary of work: We studied the effects of the Bologna reform on the curricular culture of medicine and nursing at one Swedish university, using official documents before and after the implementation, and interviews with curriculum committee chairs and the director of educational development.
Summary of results: We found small changes in the formal curricula but two different curricular cultures: In medical syllabi learning outcomes were vague as were descriptions of assessment and teaching activities. The professional influence regarding both theory and practice was strong but exerted at an informal level. In nursing, academic control of formal curricula was stronger, and the influence of the profession was limited to clinical practice.
Conclusions: When professional influence is exerted only in teaching, intentions of curricular reforms may not become implemented.
Take-home messages: When formal curricula are not used as tools for managing the educational curricular culture, educational development and quality assurance become difficult tasks. The arenas needed to guarantee professional influence at the formal curricular level may also be neglected.

4I/6
Assessing the use of a national consensus statement by mapping it to a PAL-program

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Background: Many outcome definitions by national and international societies incorporate manual skills sections. The German association for medical education has recently published a catalog of 290 learning objectives (LOC) of manual skills ordered by organ system, type and depths. A well established program of peer assisted learning tutorials at Charité was compared to this catalog to identify shortcomings within the program, evaluate the practical use of the LOC and identify potential for catalog improvement.

Summary of work: Four raters classified the coverage of each objective by one out of 48 tutorials independently. The inter-rater agreement was calculated by Spearman rank correlation overall and for each organ system separately. Conflicts were resolved by consensus, reasons for initial disagreement were noted and clustered thematically. Coverage of the LOC by the tutorial program was calculated.
Summary of results: The classifications correlate significantly. Strength of correlation depends on the organ system. Tutorials cover 66% of all and 74% of mandatory objectives. The degree of coverage varies depending on organ system and depths. Reasons for rater disagreement could be classified as either "ambiguously formulated objective", "disagreement in objective extent" or "independent of objective".
Conclusions: Comparing reference catalogs to established and well evaluated curricula offers opportunities for further catalog development.

4I/7
Characteristics of a student who is well prepared for clinical placement: a Delphi study of clinical educators

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Background: Students in the health sciences gain competency in clinical skills through participation in clinical placements. Readiness to begin learning can maximise competency development. The aim of this study was to develop a list of characteristics that experienced clinical educators perceived identified a student who, at the start of a clinical placement, was well prepared and ready to learn.
Summary of work: A two round web-based Delphi technique was used. The first round established preparedness characteristics from an open-ended question. The second round established the relative value of each characteristic on a 7 point Likert Scale. Agreement of >60 % and an inter-quartile deviation score of one or less was used to establish consensus.
Summary of results: The first questionnaire was emailed to 636 clinical educators in occupational therapy, physiotherapy and speech pathology. A total of 258 (40.6%) responded to the first round and of these, 167 (64.7%) responded to the second round. Responses were grouped into six themes (knowledge and understanding; willingness; professionalism; communication and interaction; personal attributes; skills) with consensus reached on a total of 55 characteristics.
Conclusions: A useful list of characteristics has been developed to provide overt information to students on the qualities that educators perceive identify them as well

prepared. Characteristics predominately consisted of generic rather than profession-specific competencies. The information gained should be useful to students and educators alike.

Take-home messages: Consensus was reached on 55 characteristics of a student who is well-prepared for clinical placement.

Characteristics consisted of generic rather than profession-specific attributes.

4I/8
Policy enacted - teachers' approaches to outcome based education

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Background: In relation to the European Bologna-reform, Sweden introduced national requirements for curriculum design.

Summary of work: With the mission to better understand how educational development, e.g. curriculum reforms can be supported, we studied how an educational policy influences teachers understanding about teaching and learning and what changes they performed in practice. With a hermeneutic approach we analysed; course documents from 14 courses before the reform, 14 reconstructed courses and semi-structured interviews with the teachers responsible for course design.

Summary of results: Teachers approached outcome based education as it was introduced as a policy in four different ways; outcome blind, technocratic, pragmatic and ideological. The approaches range from being; a) highly regulated to being autonomous; and b) from having a teacher-centred orientation to having a student-centred orientation to teaching and learning.

Conclusions: Policy may lead to improvements of teaching-learning and professional development for teachers. However, the same policy may also be approached as an administrative burden and hinder activities known to support learning. Shared reflection and debate of the rationales for teaching-learning embedded in a policy were significant for educational strategies to be developed.

Take-home messages: Policy may promote educational development.

4J Short Communications: Where are we with PBL?

4J/1
Problem Based Learning: Does it produce dissatisfied graduates?

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Background: Problem based learning (PBL) was originally introduced at McMaster University, Canada in the 1960s and is now widely used within UK medical schools. Given the poor performance of our institution in annual student satisfaction surveys we sought to determine whether UK undergraduate medical degree courses using PBL achieve lower National Student Survey results than those which do not.

Summary of work: National Student Survey results for the academic years 2008-2009, 2009-2010 and 2010-2011 were obtained from the national press. The online prospectus of each course was studied to determine whether it used PBL. A Mann-Whitney U test was performed to determine if a difference existed between the results of the PBL and non-PBL cohorts. A p value of <0.05 was considered statistically significant.

Summary of results: The results of 30 UK medical schools were included. Eleven (36.7%) used PBL and 19 (63.3%) did not. Mean satisfaction scores: PBL cohort = 81%, non-PBL cohort = 88%. Mann-Whitney U test: U value = 162.0 (p=0.02).

Conclusions: Our data show that UK medical schools using PBL achieve lower National Student Survey results than those that do not (p=0.02). While the decision by students to negatively appraise courses is clearly multifactorial these data suggest that PBL may contribute to graduate dissatisfaction.

4J/2
Empathy, psychological defense mechanisms and attitudes towards PBL

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Background: PBL is assumed to develop social skills and interactive competencies in addition to the regular acquisition of knowledge and clinical skills.

Summary of work: Second year medical students at the NTNU completed a pamphlet of questionnaires. The aim was to explore their attitudes towards PBL in relation to their levels of empathy and psycho-dynamic defense mechanisms.

Summary of results: The preliminary data analysis indicates that a favorable attitude towards PBL is positively associated with empathy and the use of more mature psychological defense mechanisms.

Conclusions: Students who like PBL demonstrate higher empathy and mature levels of psychological defense.

Take-home messages: Facilitators in PBL groups should utilize the potentials of group interaction to foster better interpersonal skills in students.

4J/3

Patient-centred medical education: the role of the problem-based learning case

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Background: Problem-based learning (PBL) cases tell a story of a medical encounter; however, the patient and her or his experiences are rarely the focus of the case, despite a prevalent discourse of patient-centeredness. This presentation will describe a qualitative study that addressed the question: How do PBL cases influence patient-centred medical education? It will also describe the work of the Case Review Committee at Dalhousie University.
Summary of work: The study that included a critical discourse analysis of a set of 67 PBL cases, 26 hours of observation of PBL tutorials, and, 14 in-depth interviews. Data were analysed using discourse analysis.
Summary of results: Six specific ways were identified by which PBL cases can serve to overlook social considerations thereby undermining a patient-centered approach. I will describe these issues as well as the work of the Case Review Committee, a peer review committee designed to evaluate cases for patient-centredness.
Conclusions: PBL cases constitute an important component of undergraduate medical education. Thoughtful authoring of PBL cases has the potential to reinforce, rather than undermine, principles of patient centeredness.
Take-home messages: Cases are at the core of PBL. They must be thoughtfully developed and reviewed not only for content, but also for patient-centredness.

4J/4

The decay of trust in the student-centred model of PBL

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Background: In 1996 Flinders Medical School changed from a 6 year conventional medical course to a 4 year course using a student-centred PBL model. The change was preceded by 3 years of staff development. During this period the majority of teaching staff accepted the advantages of the new model. Part of the commitment to student centred learning was allowing free time to study, which was expressed in the principle that there should be no more than 20 timetabled contact hours per week. Some hours were inflexible, such as those devoted to PBL tutorials and clinical skills sessions, leaving 7 hours per week for lectures etc. Non-adherence to this principle has been a useful indicator of staff belief in the student-centred model.
Summary of results: Lectures gradually increased from an average of 7.7 per week in 1996 to a peak of 10.2 in 2006.

The trend seemed to be connected to staff turnover, with new staff getting only a brief induction. As the principle of student-centred PBL is counter-intuitive to many people they were adding lectures to the course "just to be sure". Pressure from students, usually the more anxious ones, also played a role.
Take-home messages: A renewed staff development effort has seen this trend reversed.

4J/5

Peer Feedback and Reflection: The Effect on Student Functioning and Achievement in PBL Groups

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Background: Problem-Based Learning (PBL) is a type of collaborative learning often applied in medical education. Within PBL it is important that students contribute adequately to the group discussion because it affects group effectiveness (Lee & Roth, 2007) and achievement (Kamp et al., 2012). Unfortunately students' contributions are often sub-optimal. Peer feedback combined with reflection and goal-setting might improve students' contributions (Prins et al., 2006). Therefore this study investigated its effect on student functioning and achievement.
Summary of work: In this pretest-intervention-posttest design, students were divided over three conditions: 1 (mid-term peer feedback and individual reflection), 2 (mid-term peer feedback and collaborative reflection), and 3 (control group-no peer feedback). Pre- and posttest quality of individual contribution was measured with the M-PARS (Kamp et al., 2011) and achievement with a MCQ-test.
Summary of results: A significant positive effect was found for reflection and goal-setting on achievement, but no significant difference between conditions 1 and 2. No significant effect was found on the quality of contributions.
Conclusions: Mid-term peer feedback on students' contributions with reflection and goal setting in PBL positively influences achievement, but not the quality of contributions.
Take-home messages: In order to increase achievement within PBL, students should receive peer feedback combined with reflection on the quality of their contributions.

4J/6

Piloting Team-Based Learning in a Problem-Based Curriculum

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Background: Like problem-based learning (PBL) team-based learning (TBL) presents problems to students to motivate self-managed learning. TBL problems can consist of multiple choice questions (MCQ), and a single facilitator can manage many more students than in a PBL session.

Summary of work: Medical students were offered an 80-minute TBL-session at the end of second year. Twenty MCQs were answered individually, in groups and explained in plenary. 25 students filled out an evaluation form after the session. The form included three open-ended and three closed-ended questions about TBL as a learning method, the quality of MCQs, whether TBL supported deeper learning, and whether TBL should be integrated in the curriculum.

Summary of results: Overall participants were positive. They described TBL as motivating, as nice variety to PBL and lectures, and that it provided feedback on knowledge retention. Some suggested improvements regarding time allocation and quality of MCQs. However, all participants thought TBL-sessions should be arranged at least once each semester.

Conclusions: The results from piloting TBL in a problem-based curriculum were positive and inspire further studies on how to integrate TBL with PBL.

Take-home messages: Medical students in a problem-based curriculum welcomed TBL as a supplement to PBL. TBL was considered useful for motivation, deeper learning, repetition and feedback.

4J/7
Current Issues and Challenges in the Application of Problem-Based Learning (PBL) in Postgraduate Medical Education

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Background: Problem-based learning (PBL) has become a core component in undergraduate medical programs, but is still evolving in postgraduate education.

Summary of work: We reviewed the literature to identify current issues and challenges in adapting PBL as a core component in postgraduate medical education.

Summary of results: PBL is practiced through different models, in which the roles of faculty, and involvement of residents, as facilitators, vary significantly between models. Logistically, PBL is challenging requiring more time & compliance from learners, and requiring resources for faculty & case development. Significant barriers exist in evaluating the knowledge and clinical performance among trainees in PBL curriculums. Although postgraduate learners are mostly satisfied with PBL, a large part of the data comes from self-administered questionnaires. The role of technology in applying PBL is currently being explored.

Conclusions: The perceived advantages of PBL in areas of clinical performance and long-term knowledge retention are not entirely proven in the postgraduate setting at present, questioning its current utility.

Take-home messages: Establishing common models of postgraduate PBL, grounded in education theory, along with clarifying roles and definitions for learners and facilitators, will allow the postgraduate medical community to improve its ability to assess, evaluate and enhance PBL as an educational method.

4K Short Communications: Career Choice

4K/1
Career preferences: differences in medical students' choice between their first and 6th (last) year

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Background: The reasons why medical students choose their future careers are complex. Factors such as public opinion, prestige, personal abilities, job opportunities, lifestyle preferences, expected income, etc stand on one side, and influence of the real and of the "hidden" Medical School curriculum on the other. The aims of this study were to investigate (a) differences in specialty preferences of the same medical students' generation at the entry and at the end of their study and (b) to identify factors affecting their decision process.

Summary of work: The study was carried out at the University of Zagreb, School of Medicine, with a self-administered questionnaire completed by 193 first year medical students (acad. year 2006/7) and 196 sixth year students (acad.year 2011/12) which represents the same generation at the end of their studies. Both surveys showed that surgery as a specialty stays at the top of their interest. By the end of their study, however, there is an increasing interest for internal medicine and pediatrics, while no changes for psychiatry. Importantly, the interest for family medicine is raising whatsoever (4,1% vs. 11,7%). Factors influencing these results are discussed.

Take-home messages: Alongside all other factors, students' experiences during medical school have significant impact on their specialty choice. Since School of Medicine has a social responsibility to account for the health care needs, these results could recommend the necessity of modifying and reorienting medical curricula.

4K/2
Medical careers and coaching - an exploratory study

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Background: Modernising Medical Careers introduced a changed medical career pathway in the UK. The provision of careers information, advice and guidance is an important activity for medical schools, postgraduate deaneries and foundation schools. This study considered how career support is provided to doctors.
Summary of work: This doctoral research took a qualitative case study approach to consider how coaching can support doctors to make career choices. Data was collected from coaches, doctors and the researcher kept a reflexive diary. It was analysed using a thematic approach and four key areas were identified.
Summary of results: The findings from the research have been combined into a framework for coaches who work with doctors to use, together with a range of metaphors coaches used to describe their work. Metaphors which conceptualise how a medical career is seen were also identified together with some areas for further research.
Conclusions: Coaching can help support doctors make career choices and the career coaching framework for working with doctors can be used by faculty to review their own practice with regards to the provision of career support.
Take-home messages: Coaching can support doctors with their career choices and this new framework provides an opportunity for medical educators to review their practice.

4K/3
Exploring career decision-making in medicine: a focus group study of foundation doctors in the Wessex Deanery, UK

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Background: There has much research over the years into career choice for specialty training. However little is known about how career preferences may change over time, or be influenced by experience and circumstances. This research aimed to identify the range of differing influencing factors that are reported as affecting career choice and the points in training when they occurred in order to better support trainees in making such decisions.
Summary of work: Rounds of focus groups were undertaken with foundation doctors across the Wessex Deanery. The research questions underpinning the study are:
♣ What factors are currently influencing choice of specialty as a career for foundation doctors?
♣ Have these influencing factors changed since being an undergraduate or undertaking foundation training?

♣ Have any experiences (undergraduate/in training) been significant in coming to a decision about career choice?
Summary of results: Interim findings from the focus groups suggest that during foundation training career choice is influenced by: practicalities and 'striking a balance' particularly in terms of work and life, a growing awareness of the nature /demands of the job and post availability. The full results will be presented in relation to the research questions and wider literature.
Conclusions: The project considers the range of factors that may influence specialty career choice in the UK over recent times, and how medical educators may support trainees in making this decision.

4K/4
Career decision models. Culture and motivation

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Background: Since the beginning of 2011 the Danish Medical Association has held career development interviews with doctors in employment who wishes to discuss their future career.
Summary of work: From these individual interviews we have been able to conclude that there often is a conflict between the dominating culture in hospital and the career pattern which motivates the individual doctor.
Summary of results: At the short-communication-session we will spotlight how the career decision as a doctor match the doctors who are motivated by the expert role, while there is a clear trend showing that doctors who are motivated by broader academic skills find it difficult to thrive on the current expert culture at hospital corridors.
There are four main Career Concepts:
- The Expert
- The Linear
- The Spiral
- The Transitory
Many of the individual interviews are with doctors being motivated either by the Spiral Career Concept or the Transitory Concept.
Conclusions: On the background of about 150 individual interviews we can conclude doctors are more happy with their career choice when they have the ability to go after what motivate them – AND when they recognize and respect the motivating factors that are important for them.
Take-home messages: Individual career interviews focusing on motivational factors and wishes for future career can help the individual doctor to take responsibility for their own motivation and job satisfaction at work.

4K/5
Career choice in paediatrics - How foundation trainees navigate the career maze

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Background: In the UK, recruitment to paediatrics remains a national problem. With choice of over 60 specialities, foundation doctors are faced with the difficulty of making an early career choice.

Summary of work: To determine the factors which attract trainees to paediatrics and explore any anxieties about a paediatric career. A 20 item questionnaire was sent to the 38 recently recruited speciality trainees (ST1) in our region.

Summary of results: 76% of trainees (29/38) responded. Reliability for the Likert questions was 0.83. Fifteen (51%) trainees decided to specialize in paediatrics before or during the undergraduate years and 12 (41%) after foundation year (FY)1. All trainees had undertaken a Foundation Paediatric post either in FY1 (19) or FY2 (10). Speciality enjoyment (mean Likert score 5.39), good educational climate (5.31) and positive role models (4.89) were the favourable factors. Trainees were worried about working long (4.68) and anti-social (4.21) hours.

Conclusions: Both undergraduate experience and paediatric Foundation posts are crucial to career choice. We plan to follow this cohort of trainees to establish whether their views change over time.

Take-home messages: To recruit and retain the best trainees in paediatrics, maintaining a positive educational environment within paediatrics is important.

4K/6
Retention in a regional health network of rural physicians graduated from Maharat Nakhon Ratchasima Hospital Medical Education Center, Thailand

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Background: Maharat Nakhon Ratchasima Hospital Medical Education Center (MNRHMEC) affiliated with Mahidol University has produced 283 medical doctors between 2003 and 2012. The study were to assess short and intermediate retention rates in a regional health network, to verify specialty of alumni after completion of professional development programs (PDPs).

Summary of work: A descriptive study was conducted. Alumni were contacted and reviewed their working status via telephone, electronic mail and facebook. Short retention rate was defined as working in community hospital for 3 years. Intermediate retention rate was defined as working in the regional health network between 4 and 9 years. In-depth interviewing techniques were used.

Summary of results: Short retention rates were 100% of alumni in the 1st – 4th batch. The rates were 81%, 88% and 97% in 5th, 6th, and 7th batch, respectively. After completion of PDPs, 73% has worked in the regional network. Less than

20% chose family medicine as career path. Factors associated with retention may be personal, curriculum, working condition, incentive and family.

Conclusions: Curriculum development, career development planning and collaboration with regional health authorities have been continuously implemented.

Take-home messages: The MNRHMEC should approach both intrinsic and extrinsic factors to increase retention rates.

4L Short Communications: Professionalism

4L/1
Developing Professionalism in Italian medical students: an educational framework

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Background: Developing and assessing Professionalism in medical students is an international challenge. Our work briefly summarizes the main problems and experiences in the education towards Professionalism of undergraduate medical students and proposes a framework suited to the situation of Italian medical curricula.

Summary of work: We present the results of the empirical survey conducted on 110 first year students, 80 third year students, and 60 sixth year students as a basic first assessment.

Summary of results: In our educational design, Professionalism was defined as the context of medical expertise: the whole set of rules, conditions and meanings in which the act of healthcare takes place, as well as the ability of critical reflection on technical expertise. Professionalism is considered as a multidimensional construct of ethical, socio-cultural, relational and epistemological competencies, that requires a wide range of different tools for assessment. Professionalism is being embedded in the existing curriculum with an overall framework of assessment, through an Italian version of validated tools of measure, vignettes and videos and a student's portfolio for reflective writings.

Conclusions: A trend toward a very technical professional image emerged, with a poor tendency to look with patients' eyes. Socio-cultural competency was also low.

Take-home messages: These results are likely to have a strong impact on future curricular planning.

4L/2
"Not Worth the Effort": Why Residents and Faculty Fail To Report Unprofessional Behaviour—Concept Mapping Shows These Groups Are Not So Different

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Background: Tolerance and under-reporting of unprofessional behaviour remains the norm. In this study we identify the barriers to reporting as described by residents and faculty. Concept mapping serves to illustrate areas of mutual concern to stakeholders and the development of acceptable strategies to facilitate reporting and encourage a better work environment.
Summary of work: Concept mapping methods were employed using residents and faculty. Group "brainstorming" sessions served to create a structured conceptualization through ranking exercises. Concept maps including cluster analysis were generated to facilitate collaborative discussion. Ensuing group consensus regarding priorities, engages both groups to find solutions to shared concerns.
Summary of results: Statement lists describing barriers to reporting were generated then prioritized by study participants to allow for structured meaning-making. Clusters common to both faculty and residents include; fear of repercussions; "Whistle-blowers are complainers." "Red tape" and complex documentation are not worth the effort. Bad behaviour is often normalized – "He is just blatantly rude".
Conclusions: Cluster analysis after mapping the barriers to reporting unprofessional behaviour demonstrates strong consensus. The perceived power differential of faculty over residents is mitigated by faculty's fear of reprisal.
Take-home messages: This study makes a significant empirical contribution by providing a systematic comparative analysis of the challenges in tracking unprofessional behaviour.

4L/3
Continuity in the assessment of professional behaviour

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Background: VUmc students are judged repeatedly on professional behaviour. To effect focused guidance after an insufficient mark, the subsequent teacher must be aware of the student's problem. How can we create continuity, whilst ensuring the student's fair second chance?
Summary of work: At VUmc a new approach was developed by the coordinator of professional behaviour. After a first insufficient mark this coordinator will discuss this with the student, preferably together with the assessing teacher. The student is invited to share the conclusions, especially the resulting educational goals, with his subsequent teacher. Upon a second insufficient mark the coordinator will establish contact with the next teacher and inform the student about this. In this process of "forward feeding" the student's options to meet his learning targets in the next course are discussed.
Summary of results: In the academic year 2010/2011, 43 students were invited for a discussion after a first insufficient mark. All but one were prepared to discuss their learning targets with the next teacher. 10 students were subjected to forward feeding after a second insufficient mark. The latest numbers will be presented at the conference.
Conclusions: The new approach is effective: students appreciate the individual attention they receive, while teachers are inspired to assess professional behaviour.
Take-home messages: "Forward feeding" can be a useful method to create continuity in the assessment of professional behaviour.

4L/4
Challenges for faculty: addressing student concerns about tutor professionalism

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Background: Senior Cycle 1 (4th year) students complete a 6 week general practice rotation: weeks 1, 2 and 6 consist of taught classes; weeks 3, 4 and 5 of attendance at a GP surgery daily; week 6 consists of reflective groups, assignment portfolio submission, formative assessment by GP tutors as well as student evaluation of GP tutor and departmental teaching.
Summary of work: Students have identified concerns about GP tutor professionalism including clinical care standards, ethical issues, inter-professional communication, time management as well as health and hygiene. We explore these in a safe reflection session where faculty members moderate peer-supported small student groups.
Summary of results: Some concerns e.g. time management, may be more amenable to solutions. Others e.g. clinical care and ethical issues pose a greater challenge. Medical schools need to encourage reflection on professional practice but how to address these concerns without alienating teachers or ignoring the needs of patients in their care is key.
Conclusions: Students are identifying challenging concerns about their teachers. Our dilemma is how best to address these. We present our experience to raise awareness and solicit your assistance in formulating workable, acceptable solutions.
Take-home messages: Students identify concerns about tutor professional behaviour. This poses a challenge for faculty in formulating optimal management.

4L/5
Assessment of students' perceptions of professionalism in social media

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Background: Medical educators are responsible for helping students develop competency in professionalism. For students, understanding how their professionalism extends to the internet is important. This study assessed students' perceptions of online professionalism.
Summary of work: Using an audience response system, we surveyed all 48 first year medical students at Mayo Clinic about their views of various professionalism scenarios in social media. Students were asked to rate the degree to which scenarios represented concerning professionalism behavior in the social media from 1-10 (1=no, 10=yes).
Summary of results: Students' mean (SD) perceptions of scenarios involving medical students posting the following content in social media were: intoxication 5.11 (3.02), profanity 4.78 (2.93), sexually suggestive material 5.6 (2.67), discriminatory language 8.14 (2.12), and breach of patient confidentiality 9.73 (1.21).
Conclusions: Students indicated that breaching patient confidentiality and using discriminatory language are clear professional lapses. Exhibiting intoxication, profanity, or sexually suggestive material online, however, were not consistently perceived as unprofessional behaviors by first year medical students.
Take-home messages: Students may enter medical school with perceptions of online professional behavior that differ from the medical community and established guidelines. Early education of students regarding expectations in representing themselves professionally online may help them navigate this transition.

4L/6
Using the visual arts to learn about the doctor patient relationship

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Background: Among many identified and burgeoning uses of the humanities in medical education, less attention has traditionally been given to either visual art or how it can address learning objectives concerned with relationships. This is of particular moment when considering the continuing and long term relationships of traditional primary care.
Summary of work: The authors are experienced primary care doctors, senior educators and versed in medical humanities. They wish to present a theoretical and practical account of using visual art as a means of understanding the dimensions of relationships between doctors and patients. In doing so they will use many visual representations in the presentation.
Summary of results: Visual arts can be considered as one of many humanities' techniques in medical education: traditionally one painting has captured something of the nature of the doctor- patient encounter: 'The Doctor' by Sir Luke Fildes 1891. This is not unique and many others can be used as triggers to learning.
Conclusions: The authors will focus on the nature of the encounter, and multiple encounters over time. Visual arts can illuminate aspects of these encounters not otherwise accessible and can appeal to certain learners more powerfully than other educational interventions.
Take-home messages: Among the many ways that visual arts can inform learning, attention to the powerful, and arguably undervalued, issues in the doctor patient relationship is an engaging way of promoting this area of knowledge and skill.

4M Short Communications: Interprofessional Education

4M/1
Unexpected Lessons from Interprofessional Colleagues

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Background: The author describes a new Interprofessional Master of Education in Curriculum Studies offered through Acadia University in Nova Scotia, Canada for the first time in Sept 2009-October 2011.
Summary of work: A group of 19 participants - all full or part-time faculty or postgraduate students in one of three faculties at Dalhousie University: Dentistry, Medicine or Health Professions - registered for the course. Of these, 14 completed the degree in the anticipated 2-year time frame. Of the 10 credit courses, 7 were held via weekly classroom combined with online work, two were exclusively online, and one was a residential summer school held at the Acadia University campus.
Summary of results: Students were actively engaged in learning with colleagues from other disciplines and all classes were completely integrated across professions.
Conclusions: Valuable experiences and lessons were gained via participating in a postgraduate Education course with registrants from a wide variety of clinical disciplines.
Take-home messages: Interprofessional learning is effective at a postgraduate level. Masters students benefitted greatly from interacting and sharing ideas across disciplines

4M/2
Interprofessional case based learning

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Background: Case-based learning (CBL) is an established pedagogical method defined in a number of ways depending on the discipline and type of case being used. It can be thought of as a type of inquiry-based learning with a long history in health professional, law and business education. CBL provides students with the opportunity to see theory in practice using authentic real-life narratives.
Summary of work: There is little published about interprofessional CBL, where groups of students from different disciplines learn with and from each other. Our project parallels the Harvard cross-disciplinary review method of CBL.
Summary of results: We have created interdisciplinary cases to facilitate shared learning outcomes in business, medicine, law, education and social work. During role-play CBL, learners undertake a role, understand its responsibilities, collaborate with peers towards common goals, conduct research, and evaluate own learning. We will present what we have learnt from these cases including their evaluation with students.
Conclusions: The challenges when creating interprofessional cases include developing a shared understanding of terminology, interprofessional team working, and curriculum planning. During the process of creating scenarios, a greater understanding of the ways in which different disciplines develop and use cases has emerged.
Take-home messages: Interprofessional CBL has the capacity to deepen student's understanding of complex authentic situations.

4M/3
Academic staff attitudes and beliefs about interprofessional education in a comprehensive health faculty

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Background: There is a need for data on staff attitudes and beliefs about interprofessional education (IPE) to inform the development and implementation of IPE curricula.
Summary of work: Structured interviews were conducted with degree program leaders across 11 health professional schools at Griffith University about their understanding of IPE, implementing an IPE curriculum, communication in health care teams and perceived attributes of other health professions.
Summary of results: Consensus was evident in the desire for early introduction of IPE in a degree, and in the belief that interprofessional collaboration needs to be embedded in routine practice. Staff significantly varied in their definitions and understanding of IPE, and in curricula strategies and topics that suited IPE. Most believe that health teams are hierarchical, although this varies across contexts, and may impact on communication within teams. There were strong, but different, perceptions of key attributes of other health professions.
Conclusions: This study revealed a range of knowledge, misconceptions, beliefs and attitudes about IPE. Professional development prior to implementing IPE needs to focus on attitudes, beliefs and interpersonal skills more so than on knowledge of others' roles.
Take-home messages: Health professional staff in academic settings holds variable, strong views about IPE and other professions which need to be identified for effective curriculum implementation.

4M/4
Interprofessional Pain Education for Undergraduates: Impact and Challenges

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Background: Research has highlighted the limited amount and range of undergraduate pain education in the United Kingdom (Briggs et al 2011). In response to this and political drivers to improve pain education (Donaldson 2009), an

innovative, interprofessional pain education learning unit was developed. The initiative aimed to:
• Improve the pain management knowledge, skills and attitudes of our students
• Enhance the interprofessional collaboration that is essential for effective pain management
The learning unit has an online learning environment to provide common learning before students take part in interprofessional workshops. It adds to the menu of interprofessional learning opportunities within Kings College London.
Summary of work: Second year undergraduates from Dentistry, Medicine, Nursing, Pharmacy, and Physiotherapy (n=980) undertook the learning unit between December 2011 and February 2012. Formal evaluation was undertaken with the students, workshop facilitators and a local patient group. Research into the impact on student knowledge and attitudes consisted of a pre and post-test assessment via an online survey.
Summary of results: This short communication will describe the development of the learning unit, the key challenges in implementation and the observed impact through evaluation and research data (available from March 2012).
Conclusions: This initiative at King's College London identifies important issues regarding the impact and challenges of planning and delivering effective interprofessional pain education.

4M/5
Educating junior doctors about interprofessional practice: more barriers than enablers

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Background: Complexity of patient care and interdependency of health professionals draws attention to the benefits of collaborative interprofessional practice. This study explores how junior doctors practice interprofessionally.
Summary of work: Mixed methods were employed: a literature review, interviews and observations. Themes explored were culture; acculturation; communication, collaboration and competency. Thirty-two junior doctors from three Australian teaching hospitals participated, comprising Australian and International Medical Graduates. Data were collected from in-depth interviews and observations.
Summary of results: Diversity in doctors' medical training and in ethnic cultures of doctors affected their understanding of interprofessional practice (IPP). Communication was weak interprofessionally, restricting learning from other health professionals. Allied health professionals' roles were unclear.

Doctors rarely read non-medical patient notes. Ward rounds were typically doctor only. Doctors lacked confidence in communicating with senior clinicians, some reluctant to seek clarification of clinical matters. Numerous doctors' tasks are performed outside their wards hindering IPP.
Conclusions: Medical graduates around the world are changing. Issues affecting IPP extend beyond diversity, to the culture of hospitals. Doctors perceive IPP as conceptually good but difficult to enact. Barriers include: synchronising the patient care team; pressures of time, poor communication and inadequate support.
Take-home messages: Doctors' ability to practice interprofessionally is impeded by excessive demands and uncompromising hospital organisational cultures.

4M/6
About the development of interprofessional modules

Theresa Scherer (*Berner Fachhochschule, Fachbereich Gesundheit, Bern, Switzerland*)

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Background: The University of Applied Sciences in Bern educates health professionals in four bachelor degree programs - Nursing, Physiotherapy, Midwifery and Nutrition & Dietetics. Although the curricula have been developed separately, all four courses are competency based and apply problem based-learning techniques.
Summary of work: Due to the increasing demand for inter-professional cooperation in health care, three inter-professional modules have been developed according to Bloom's taxonomy of learning domains.
Summary of results: First-year students acquire a basic knowledge relevant to all four different health professions and become accustomed to the emphasis based on the individual professional profiles (knowledge and comprehension). In their second year the students are expected to participate and fulfill an inter-professional project in health promotion (application). In their final academic year students analyze inter-professional collaboration in a professional work life setting together with medical students (analysis and synthesis). Two out of three modules have already been realized in four of the curricula and the intended goals have been achieved. Plans for the realization of the third module are still underway.
Conclusions: Development of the inter-professional modules requires a high degree of coordination between the involved professions and needs to be supported and represented by all of them.
Take-home messages: Inter-professionalism can be integrated into already existing curricula with a reasonable amount of ECTS credits being invested.

4M/7
The Use of UNMDG case studies to promote interprofessional learning and raise global health awareness in pre-registration students

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Background: Global health and internationalisation of the curriculum are key issues in educational development and pedagogy. In order to achieve the United Nations Millennium Development Goals (UNMDG) and its targets for 2015, all communities need to work together. The Universitas 21 (U21) UNMDG initiative is an interprofessional project involving faculty and students that aims to develop an educational strategy to raise awareness of UNMDGs, to be adopted and implemented into the curriculum of health professional training programs.

Summary of work: Students from 9 health sciences disciplines and 4 universities attended a one-day workshop held in the University of Lund (Sweden). Interprofessional study groups were facilitated by faculty members from 3 universities and comprised 5 disciplines. The workshop comprised a PBL approach to learning. Each group was provided with a case study, previously validated by an international group of healthcare academics. Students were able to access a range of resources including internet. Data was collected using 2 evaluation forms that were developed to be used with international and interprofessional bodies of students.

Summary of results: A descriptive analysis approach was taken and data comprised completed questionnaires. Discrete data allowed comparison of the development of understanding of the subject matter, and whether the learning outcomes were achieved. Content analysis of the textual responses presented the investigators with detail of elements of success and further areas for development.

Conclusions: Literature supports the use of the case studies currently developed in raising awareness of the UNMDGs, and global health issues. The case studies provide complex learning opportunities which promote interprofessional learning.

4N Workshop: Young medical educators' workshop: Collaborative Research in Medical Education: strategies, benefits, pitfalls

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Stewart Mennin, University of New Mexico School of Medicine/Mennin Consulting and Associates Inc., New Mexico

Background: Collaborative research projects can be quite challenging, especially if you are relatively new to the field of medical education. However, undertaking research in collaboration with others has great potential. The workshop will explore strategies and pitfalls for successfully undertaking collaborative research projects.

Intended outcomes: At the end of the workshop participants will be able to: (1) identify principles and practical strategies for successful collaborative research in medical education; (2) adapt these principles and practical strategies to their own needs; (3) establish an electronic network for continued dialogue and support.

Structure: After an introduction to and exploration of principles of and experiences with collaborative research in medical education, participants will have the opportunity to develop their own concepts and questions and discuss them with other participants and facilitators.

Who should attend: Young medical educators interested in doing research projects in collaboration with others.

Level of workshop: Beginner.

4O Workshop: Integrating Virtual Patients in Clinical Education

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Valerie Lang, University of Rochester, Medicine, United States
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Background: Virtual patients (VPs) can be a valuable supplement to clinical education to train for clinical decision making at the bedside. To take full advantage of VPs, they should be an integral component of the clinical learning and assessment experience.

Intended outcomes: Participants in this workshop will gain the knowledge and tools they need to effectively integrate VPs at their own institutions.

Structure: The workshop will be based on experience with broad adoption of VPs at medical schools in the US and Europe. The workshop will include a review of the evidence regarding the importance of integration, features of effective integration, what is known about integration practices in different contexts in the US and Europe, and tools available to assist in VP integration and VP-based formative assessment. A proven framework for successful integration will be presented, following which participants will work in small groups to develop an integration plan for their school. A large group question and answer period will provide participants with the opportunity to discuss VP integration with a group of educators with extensive experience with VPs in the US and Europe over the last decade.

Who should attend: Medical educators interested in learning about integration of VPs; medical educators considering implementing VPs in any component of medical education; anyone engaged in any aspect of medical education wanting to know more about the use of VPs.

Level of workshop: Intermediate.

4P Workshop: Writing MCQs in challenging content areas

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Background: Even the best item writers often find it difficult to construct MCQs focused on professionalism and ethics; systems-based practice and patient safety; and interpretation of the medical literature and evidence based medicine. Questions often turn out to ask for definitions rather than assessing whether examinees can apply their knowledge in these areas to decisions related to patient care. This workshop focuses on writing MCQs in challenging areas that require examinees to apply their knowledge in these areas.
Intended outcomes: At the conclusion of the workshop, participants will be able to: 1) Effectively structure scenarios that will assess application of knowledge rather than recall of facts 2) Develop item stems option lists that assess these hard-to-measure competencies 3) Participate effectively in group review of MCQs.
Structure: The workshop will be run in an interactive, seminar-style format as delineated below: 1) Goals and issues related to writing MCQs to assess professionalism and other hard-to-measure competencies 2) Review of sample well-written items in each area 3) Revision of poorly written items in interdisciplinary small groups; 4) Full group review of newly rewritten items 5) General discussion of issues in assessment of hard-to-measure competencies Attendees will receive a copy of Case & Swanson's Constructing Written Test Questions for the Basic and Clinical Sciences.
Who should attend: Faculty involved in writing MCQ-based exams, including directors of basic science courses, clerkships, and postgraduate training, members of Royal Colleges and specialty boards. Attendees should be familiar with guidelines for writing well-structured single-best-answer questions.
Level of workshop: Advanced.

4Q Workshop: Training the Trainers to Support Doctors in Difficulty

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Background: Educational supervisors have a key role in identifying and supporting doctors in difficulty during their careers. With improving assessment and educational supervision a wider, more complex range of issues are being discovered. Supervisors require additional training in knowledge, skills and attitude to enable them to support and remediate these doctors in a structured and timely fashion. In 2008 NACT UK published a framework for managing these complex situations which has been widely adopted across the UK. This workshop will demonstrate how the NACT UK

document can be embedded within a Faculty Development programme for educational supervisors.
Intended outcomes: To enhance the understanding of what causes doctors to run into difficulties and the importance of adopting a structured systematic approach that is connected to the processes of both the educational programme and the employing hospital. To enable medical education leaders to provide additional support for educational supervisors.
Structure: Plenary and small group work. The key elements of the NACT UK document will be described: a copy will be provided for all participants. Experience of delivering Training the Trainer workshops will be shared. Sharing of experiences will be encouraged.
Who should attend: All educational supervisors, medical trainers and those involved in faculty development.
Level of workshop: Intermediate.

4R Workshop: Teaching confidentiality with confidence

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Background: The personal information that patients share with clinicians is fundamental to the clinical relationship. Essential to appropriate practice, treatment decisions and research into treatments, it is also central to patients' trust in doctors as providers of medical treatment. However there are also occasions where disclosure is justified. What approaches can medical teachers take to promote student learning in this area of professional practice?
Intended outcomes: This interactive workshop will draw on the experience and insights of participants with a view to inspiring those who are looking for new directions in their ethics teaching. The creative and constructive ethos of the workshop will enable participants to return to their schools invigorated with fresh ideas and challenged by approaches to teaching confidentiality standards in different cultures.
Structure: Teaching priorities relating to confidentiality will be identified by participants, and the workshop leaders will offer examples of successful teaching to illustrate possible approaches. Small groups will focus on areas where participants are looking for inspiration. The workshop concludes with collective take-home messages.
Who should attend: New and experienced ethics teachers, clinicians responsible for occasional ethics teaching, and tutors with or without clinical backgrounds.
Level of workshop: Intermediate.

4S Workshop: Setting up OSCE examinations: Academic considerations

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Background: To the best of our knowledge a practical manual of setting up OSCEs does not exist in the peer reviewed literature. Assessment of performance and competencies in simulated environments is very important in health professional education, for this purpose OSCE techniques are widely used in both undergraduate and post graduate programmes. The reliability and validity of any assessment depends on the quality of the tool developed. This workshop will be based on our upcoming AMEE Guide Setting-up an OSCE: Practical Considerations.
Intended outcomes: 1. A better understanding of the educational principles underlying OSCEs. 2. Acquisition of skills to write questions and develop marking schemes. 3. Ability to review and quality assure existing OSCEs.
Structure: Introduction; Group Discussion on Principles of OSCE; OSCE question writing on a template; Marking Scheme development; QA issues.
Who should attend: Novice and Intermediate level OSCE station developers and examiners.
Level of workshop: Intermediate.

4T Workshop: Mastery Learning and Deliberate Practice in Medical Education

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Background: Mastery learning is a strict form of competency-based education in which educational outcomes are uniform but learning time varies. The principles of deliberate practice and mastery learning allow for the development of important clinical skills. This workshop will present an overview of mastery learning and deliberate practice. Participants will have the opportunity to review clinical skill examples, design a mastery learning program, and discuss results.
Intended outcomes: participants will: 1. Comprehend principles of mastery learning and deliberate practice 2. Describe advantages of mastery learning and deliberate practice over traditional educational strategies 3. Design a mastery learning program for a sample clinical skill.
Structure: (1) Principles of ML and deliberate practice DP will be presented and discussed with examples from the health professions. (2) Participants will design a mastery learning program for clinical skill acquisition including objectives, deliberate practice, outcome measures, feedback provisions, and standard setting. (3) Individual and group participants

will report and discuss their results. Mastery learning skill acquisition curricula can be implemented when participants return to their home institutions. 1. Overview and introductions (5 minutes) 2. Review principles of mastery learning and deliberate practice (15 minutes) 3. Curriculum design exercise – design a mastery learning program for a sample clinical skill (30 minutes) 4. Individual and group reports about curriculum design exercise (30 minutes) 5. Wrap up and evaluations (10 minutes).
Who should attend: Health professions educators (e.g., nurses, physicians, physiotherapists) interested in designing and implementing educational programs based on the mastery learning model.
Level of workshop: Intermediate.

4U Workshop (Atelier en français): Intégrer les compétences émotionnelles dans un curriculum de formation professionnelle en santé recourant à l'approche par competences

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Le concept d'intelligence émotionnelle (IE) est un construit récent. Dans le cadre de planifications curriculaires en santé, le champ des émotions a jusqu'à présent été peu pris en compte. La nature et la qualité des apprentissages à effectuer pour développer des compétences émotionnelles (CE) ont été peu explicitées. Les dispositifs de formation dédiés à de tels objectifs sont peu nombreux dans le monde francophone, alors qu'ils font l'objet d'un développement significatif dans le monde anglo-saxon. Parallèlement, le courant actuel de l'approche pédagogique par compétences (APC) invite à mettre en concordance les différentes composantes des référentiels de compétences avec les différents domaines -ou dimensions- et niveaux -ou degrés- d'une taxonomie des compétences, dans le cadre d'une démarche de didactique professionnelle.
1) Définir le concept de CE, en lien avec le courant de l'IE. 2) Expliquer la pertinence de distinguer le champ des CE de celui des compétences en communication. 3) Argumenter l'intérêt de recourir à une taxonomie des CE pour planifier les activités d'enseignement, d'apprentissage et d'évaluation relatives au développement de CE. 4) Concevoir des dispositifs curriculaires dédiés au développement des CE dans le cadre général de l'APC. 5) Examiner les conditions à réunir pour favoriser un développement éthiquement acceptable des CE dans le cadre d'un curriculum de formation pofessionnelle en santé.
Au cours de l'atelier, alterneront des activités réflexives en petits groupes, des rapports et des échanges en séance

plénière et des apports conceptuels soutenus par diverses ressources didactiques.

4W Posters: Faculty Development

4W/1
Teaching the senior teachers improves the learning environment

Merete Ipsen (*Center for Medical Education, Aarhus University, Aarhus, Denmark*)
Mads Nibe (*Concern Human Ressources, North Denmark Region, Aalborg, Denmark*)

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Background: The current Danish specialty programme is mainly competency-based and requires daily supervision along with progress-and-appraisal-meetings (P&A) provided by medical specialists (MS). However, not all senior MS have been trained for these assignments and, accordingly, they might not provide excellent medical education.
Summary of work: We developed a teach-the-teacher course for MS in order to improve their academic knowledge (pedagogical theories), supervisor skills (communication and feedback tools), and educational administration skills (undertaking an educational project). The course evaluation consisted of two self-reported questionnaires, one after three days, and another after three months. Likert scales from 1-5 (5 best) and open comments were applied.
Summary of results: The response rate was 71 %. After three months, thus after using their new skills, the MS reported that their supervisor skills improved from 2,9 to 4,1 (averages) on the Likert scale. Further, 67 % of the MS perceived that undertaking projects were relevant (score 4-5), and 53 % found that their projects created a better learning environment (score 4-5).
Conclusions: Teaching medical education improves the MS' daily supervisor skills and their educational administrative skills. The educational projects helped the MS to see clinical education in an administrative perspective and improved the learning environment.
Take-home messages: Teach the teachers! It improves the learning environment.

4W/2
Better teachers for medical education through a faculty development teaching program: the Singapore experience

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Lawrence Greenblatt (*Duke University Medical Center, Internal Medicine, North Carolina, United States*)
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Background: Given the changing context of medical education, faculty development initiatives must meet the needs of a diverse group of clinician educators.
Summary of work: The objective of this study is to evaluate the short term effectiveness of a teaching program to improve teaching knowledge, skills and behavior of faculty in Singapore. Thirty five faculty from ACGME-I accredited residency programs participated in the Stanford Faculty Development Program (SFDP) in August, 2011. Using an online survey based on a modified SFDP-26 questionnaire, participants rated their pre- and post-seminar teaching performance and interactions retrospectively, or 2 months after the seminar was conducted.
Summary of results: Using Wilcoxon Rank Sign Test, pre- and post-test scores of questionnaire items covering teaching performance and teaching interactions were compared. Results showed statistically significant improvement in post-test scores compared to pretest scores for all items in the questionnaire, with p values ranging from 0.0001 to <0.0001. Overall effectiveness rating of the seminar was "effective" (mean=4.11, 5 as highest). Score was not significantly influenced by age, sex, years in practice and designation.
Conclusions: We conclude that the faculty development program implemented in SingHealth was effective in improving teaching skills of participants in the short term.
Take-home messages: Sustainability of this improvement will be determined in future follow-up studies.

4W/3
Transfer to workplace of competencies learnt in a programme for educational supervisors training offered by the East Midlands Healthcare Workforce Deanery, England

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Catherine Matheson (*University of Nottingham / East Midlands Deanery, Medical Education Unit, Nottingham, United Kingdom*)

(*Presenter:* David Matheson, University of Nottingham / East Midlands Deanery, Medical Education Unit, Queens Medical Centre, Nottingham NG7 2UH, United Kingdom, david.matheson@nottingham.ac.uk)

Background: The Programme for Educational Supervisor Training [PEST] in the East Midlands Deanery is a two-day training course.
Summary of work: To gain a better knowledge and understanding of the transfer to the workplace of the impact of competencies learnt in a programme for educational supervisors training. A total of 400 consultants who attended

PEST were surveyed in the form a pre-PEST questionnaire asking them to rate themselves against each of competencies taught on the course and of what they most wanted to learn. At the end of the course they were surveyed to assess how much they had learnt from the course. Between 4 and 6 months after the course participants were sent a follow up post-PEST questionnaire and asked open-ended questions about how PEST changed their practice.

Summary of results: Preliminary results show highly significant improvement in all the competencies in both the post-PEST and the follow-up PEST survey.

Conclusions: Participants have benefitted from the PEST course and significantly increased their competencies both in the short and in the longer term.

Take-home messages: Properly conceived, short courses can have significant long-term impact.

4W/4
Narratives in Faculty Development

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Background: Faculty development needs methodologies that reflect the reality and meaningfulness for teachers in the process of continuing education.

Summary of work: The aim was to build a faculty development program in Community Health Education in the medical school, using narratives of daily life of preceptors in the Family Health Program– PSF. Freire's method – developing problems - was used with the teachers'narratives. The first theme was "Being a preceptor in the PSF practice ". In the first session they choose the most significant narrative. Teachers reflected and identified needs for development from theory and experiences in the PSF. In the second session, teachers propose an intervention to apply to their teaching practice in similar situations.

Summary of results: The narrative chosen "The Critical Incidents" is common in practice, considering the difficulty of agreement, no shared planning, lack of commitment, flexibility, and adaptability to new situations. The other narratives have identified themes of Teaching Development Program whose topics are: family structure, genogram, comprehensiveness, mapping risk, vulnerability, construction of care, network care, clinical management, matricial support, Therapeutic Singular Project – PTS, medicine person, medicine family.

Conclusions: This strategy could identify the needs for faculty development and interventions in the reality of the PSF in Brazil.

Take-home messages: Faculty development should be institutionalized and meet the needs of teachers from the work process.

4W/5
Online teacher development: critical issues and possible solutions

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Valdes Bollela (*USP - Ribeirão Preto, Ribeirão Preto, Brazil*)
Eliana Amaral (*UNICAMP, Campinas, Brazil*)
Paulo Marcondes (*FAMEMA, Marília, Brazil*)

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Background: Distance learning tools for faculty development seems a sensible route, but there is a doubt if the teachers fully accept this idea.

Summary of work: Observational study using a survey with semi-structured and open-ended questions applied to teachers from different medical schools in Brazil, while they were participants on a faculty development program.

Summary of results: Out of 100 participants 37 answered the questionnaire. Of these, 30 (81%) agreed or strongly agreed that even if teachers are trained in the use of online tools, many of them have difficulty in using them regularly. About 32 (86%) teachers do not dedicate any time in their weekly schedule for faculty development activities. Most of them, 34 (91%) said that constant feedback is very important for effective participation, while 27 (73%) pointed to the task as an important stimulus. Reflecting on their participation in the current activity, only 4 (11%) felt that they had participated effectively and 30 (83.3%) said that they could have participated to a greater extent.

Conclusions: Constant interaction, feedback and compulsory participation on the required task, seem to be important factors in making the process a success.

Take-home messages: Use of online tools is a challenge. Recognition of the difficulties can help in finding strategies that foster greater effectiveness of the method.

4W/6
National strategy for faculty development in Kazakhstan Medical Universities

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Background: Faculty development is an increasingly important component for improvement of medical education

in Concept of Medical Education Development in Kazakhstan 2015. A national strategy for implementation of the faculty development competencies throughout medical universities of Kazakhstan has been developed within the framework of MoH and IBRD Project.

Summary of work: CSIH as twinning partner for Medical Education component provided feedback from consultants to existing faculty development programme at universities. Deliverables for development of Capacity building plan for faculty was submitted and discussed. The framework of competencies for medical faculty, descriptors, enablers, objectives, and levels of proficiency was developed to ensure that they are appropriate and would be applied to needs of current medical education program.

Summary of results: Development of National plan allowed the establishment of Centres for Medical Education; suggest Medical Education Centres Advisory Committee to coordinate, monitor national implementation plan; define faculty core competencies; develop Capacity building plan for faculty.

Conclusions: Th implementation of a national strategy and specific plan for each medical university at the local level for delivery of a programme for faculty development competencies will increase medical education capacity across the medical continuum.

Take-home messages: Centres should undertake and foster research in medical education, particularly in Faculty Development.

4W/7

Building a competence based teaching profile for a multi-career Faculty of Medicine

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Background: This investigation explored the quality of competencies that a medical school lecturer - conscious of the learning objectives for medical education – should accomplish and generate a proposal to train acquisition of essential skills. We questioned whether the providers of those competencies were prepared, based on a good university teacher profile.

Summary of work: This qualitative research was focussed on faculty members at Clinica Alemana-Universidad del Desarrollo Medical School, including seven careers: Medicine, Odontology, Nursing, Phonoaudiology, Physical Therapy, Nutrition and Dieting, and Medical Technology. Using case study methodology, there were three sequential steps: 1st) inquire information from relevant participants in the educational community and documentary analyses; 2nd) construct up to seven competencies for the good university teacher; 3rd) validate built competencies in the educational community.

Summary of results: The product was a document with transversal competencies for all Faculty members.

Conclusions: Evidence showed that essential competencies were transversal to all careers of Faculty of Medicine and they were the baseline to design the outline of the good university teacher profile.

Take-home messages: Next step will be a methodological proposal to improve acquisition of essential skills for all teachers, in order to achieve the implementation of this profile. Furthermore, this methodological proposal can be transferred to other schools, and contribute to strengthening university teaching.

4W/8

Evaluation of a Mentorship Program in a Canadian School of Medicine & Dentistry

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Douglas Jones (*Western University, Schulich School of Medicine & Dentistry, Basic Medical Sciences, London, Canada*)
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Lois Haytor (*Western University, Schulich School of Medicine & Dentistry, Anesthesia and Perioperative Medicine, London, Canada*)

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Background: A mentorship program was initiated in 2010. Key program element, the establishment, within each department, of a formal mentorship process to ensure the opportunity for a mentorship committee is offered to each eligible faculty member.

Summary of work: On-line (quantitative/qualitative) surveys were developed to obtain mentor and mentee perspectives on how well the program is being implemented, and how the program is working from their respective perspectives.

Summary of results: Thirty-eight mentors and 28 mentees responded. Key strengths: transfer of knowledge from mentors to mentees with respect to building successful professional careers; mentors/mentees benefited from constructive, non-judgmental, positive, facilitative, and learner-centered mentorship process; and mentors (76.3%) and mentees (64.3%) were satisfied with their experience with their Mentorship Committees. Concerns: mentors (55.6%) and mentees (64.3%) did not know a mentorship policy\ guidelines document existed.

Conclusions: Institution of a formal mentorship program in a medical\dental school can benefit both mentors and mentees by establishing relationships and building skills, and professional knowledge.

Take-home messages: A formalized mentorship committee is beneficial. Collegial, non-judgmental mentoring relationships by mentorship committees are important to successful mentorship programs. On-going profiling of the mentorship program and education about mentoring are necessary to enhance mentoring in the academic institution.

4W/9
Co-operation of all German Speaking Veterinary Universities to Create a Competence Center for Veterinary Education

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Background: Veterinary medicine in Europe is evaluated by the EAEVE but in the German speaking countries the implemented curricula are very different. Moreover, didactics and educational research is of special interest, since veterinary medicine is a mixture of academic literacy and preparation for a profession. A cooperation between the German speaking universities exists since 2007 in the field of e-learning.

Summary of work: Now, funded by the VolkswagenStiftung/Mercator eight veterinary universities in Germany, Austria and Switzerland founded a competence center for veterinary education. The project is based on seven work packages. Additional funding is reserved for educational research projects and a "best teaching project" award.

Summary of results: The aims agreed on are: Survey of the status quo in veterinary education, development of special veterinary didactics, improved teacher training based on educational research and establishment of co-operations in education and teaching (e.g. simultaneous courses at several universities).

Conclusions: During the next three years the competence centre will be established and afterwards should persist without third-party funding. It will enable participating institutions to improve their education by exchanging ideas and results in a way comparable to the situation in the field of research.

Take-home messages: Inter-university co-operations as a measure to improve education.

4W/10
Non-displayed posters at AMEE 2011 conference: magnitude of the problem and causality

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Background: As Professor Harden blogged, around 40% of submissions for AMEE 2011 conference were rejected. While being increasingly competitive to get accepted for conference presentation, our impression was that many posters were missing in 2011. So, we aim to investigate this counterintuitive phenomenon by exploring the following research questions: What is the extent and geographical distribution of non-displayed posters (NDPs) at AMEE 2011 conference? What are the reasons for not displaying the accepted posters?

Summary of work: Using observational approach, we documented all NDPs on the second day of the conference (August 30th 2011) between 12.25 and 12.45 hours. We then sent a questionnaire to poster presenters investigating the reasons for non-attendance.

Summary of results: There were 103 NDPs, 13.4% of all program included; 34 posters from Iranian presenters were absent, 39 European (19 UK), 9 Canadian. Only 59 presenters needed visa for entering Austria. Email responses so far are low (16%); emerging reasons are denial, visa acquisition problems, medical and high costs.

Conclusions: Many posters were not displayed. We expected majority of them to hail from afar, but a substantial number originated nearby. Denial of non-displaying the posters rated highest among the reasons, questioning our method and/or presenters' academic honesty.

Take-home messages: Managing objective hurdles effectively should reduce poster absenteeism.

4W/11
A smart way to get published

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Background: As part of medical education, writing about and publishing research results has become increasingly important for both medical students and medical professionals worldwide.

Summary of work: We will discuss the essence of how to write and publish a journal article effectively, including the importance of publication, following instructions to authors, parts and structure of a journal article, title vs. message, content and logical progression of each part, especially that of Introduction and Discussion, common mistakes and solutions, and the publication process. Details regarding research and publication ethics, and understanding the instructions to authors will also be discussed.

Summary of results: We intend to help the authors understand how to write and publish a journal article more effectively. This poster is expected to facilitate the author's professional career.

Conclusions: Those who need to publish, have tried to write and publish a journal article but have found the experience/outcome rather painful/discouraging/dissatisfactory may benefit most from this poster.

Take-home messages: Publishing your research in a peer-reviewed article is not as hard as you thought.

4W/12
Using Online Form for Increasing Response Rate in Quality Assurance Evaluation

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Background: Educational quality assurance(QA) makes use of the questionnaires for curriculum evaluation every academic year. How to cope with low response rate?
Summary of work: The researcher created online forms instead of paper surveys for clinicians and clinical year medical students(MS), Faculty of Medicine, Burapha University, academic years 2010 to 2011. The online forms were sent via each email address and then inform the MS on social media-FaceBook(FB) to do these. Scored reply rate and also tested difference for the number of response in each group.
Summary of results: The reply rates in online method were not significantly different from paper survey. In details, the average MD reply rates up to 75.63% after posted on FB rather than only attached via email address. Using online form for clinician survey were less reply rates (22.22%) than paper survey.
Conclusions: It seems not to be a valuable asset to use online form for an increase of reply rates. The point of view, management of the two groups are somewhat different approach.
Take-home messages: However, online form is imperative for the future. Therefore, the solution should be considered with other methods.

4W/13
Is observation of teaching an effective tool for professional development?

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Background: Warwick Dentistry works with primary care practitioners to deliver postgraduate dental education from a range of regional teaching centres. Teaching in the centres is monitored through regular observation of teaching and feedback.
Summary of work: Three models of teaching observation were used to:
1. evaluate the quality of teaching
2. develop teaching through improving educational practice
3. foster collaboration by creating and sustaining scholarly conversations between peers.
Summary of results: Working with a combination of observation models enabled observers and observeesto develop not only their teaching practice but also to initiate change in curriculum design and delivery.
Conclusions: This study shows that observation of teaching can be a powerful tool for development if it si implemented carefully and engages all participants.
Take-home messages: Identifying appropriate observation models for specific teaching situations is key to enhancing the effectiveness of this professional development tool.

4W/14
RIPPLE - Regional Integrated Programme for Paediatric Local Educators, Empowering local faculty to teach and support paediatric trainees through the MRCPCH

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Background: With variable pass-rates across the UK, the MRCPCH exam presents a bottleneck in continuing paediatric run-through training. Trainees often feel unsupported within their Trusts due to paucity of MRCPCH teaching, with senior consultants disengaging due to lack of familiarity with the new exam format.
Summary of work: In response, The London School of Paediatrics developed a faculty development programme, RIPPLE, aimed at local trainers, to improve the quality of local training, address clinical MRCPCH teaching and encourage networking. It includes a three-day taught course, peer-observed learning, local Action Learning Sets and a sector-based project.
Summary of results: We delivered the RIPPLE programme in all 5 sectors across London, training 90 consultants and senior trainees. Afterwards delegates felt significantly more confident to deliver effective MRCPCH teaching, incorporate teaching into daily practice and support trainees in exam preparation. They also used the opportunities to develop clinical MRCPCH network teaching.
Conclusions: This unique programme has equipped local faculty across London with skills to teach and support trainees through their MRCPCH exam. It also promotes integration of high quality teaching within daily clinical practice, making every moment count.
Take-home messages: Developing strong local faculties will enhance local teaching quality and support trainees to achieve excellence in paediatric training.

4W/15
Continuous teaching training: a medical curriculum space

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Background: Medical Education Department aims to improve teaching practices and its social demands through Program "Continuous teaching training for health professionals", consulting and mentoring services.
Summary of work: Analysis of documents relating to educational planning, assessments, interviews results, etc. produced by Department
Summary of results: The more widespread teacher education type remains informal (53% non-accredited), reproducing professors´ models or self-taught (72%). Continuous teacher training is barely observed: 4 of 5 (81%) did not train during last biennium, 32% (1 of 3) do not interact with educational material or do occasionally (9% never) in contrast with training graduate speciality. It is consistent that areas in which teachers feel more prepared to act are 39% medical care, 35% teaching and 26% research.
Conclusions: There´s a correspondence between type of teacher training and educational planning, beyond those expressed in the curriculum. In pedagogical proposals, rarely found is the generation of educational situations requiring the exercise of decision making, problem solving; with specific attitudes of medical identity as well as teaching-learning situations aimed at self-learning training and continuing education. To be successful at improving teaching and learning Medical Sciences for which they have received no formal training appropriate teaching strategies with specific disciplinary content should be developed, a well as comprehensive pedagogical basic training and continuous teacher development through interdisciplinarity.

4W/16
Can the doctors as teachers assessment tool promote faculty development?

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Background: The role of doctors as teachers demands sharper focus as the professionalisation of medical education gathers increasing momentum. The General Medical Council is expected to introduce professional standards for trainers in 2013 which will require doctors in educational and clinical supervisor roles to meet rigorous criteria, demonstrating evidence of training and professional development. Meaningful educational appraisal requires due consideration of multisource feedback.
Summary of work: This paper analyses the wider use of the multisource feedback Doctors as Teachers Assessment (DATA) tool, developed and pilot tested by the West Midlands Deanery, UK.
Summary of results: Using the DATA tool, 252 consultant educational / clinical supervisors were rated in confidence by their student or trainee. Ratings for the 4 domains (poor, adequate, good, excellent and unable to comment respectively) are presented: Teaching at the Correct Level (1.5%, 2.3%, 23%, 69% and 3.1%); Clinical Knowledge and Skills (0%, 1.5%, 20%, 75% and 2.7%); Teaching Techniques (1.5%, 2.7%, 25%, 67% and 2.7%); Inspirational Role Model (1.5%, 3.1%, 31%, 60% and 3.5%). Freehand comments on all 4 domains were recorded and will be presented.
Conclusions: This study demonstrates that the DATA tool is a reliable and valid assessment of teacher performance and has the potential to assist and promote faculty development.
Take-home messages: Doctors as Teachers Assessment (DATA) is a valuable multisource feedback tool for assessing teacher performance and promoting faculty development.

4W/17
Exploring community faculty engagement in education scholarship

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Background: Increasingly, medical schools are recruiting faculty from the community. Scholarship in teaching poses a particular challenge for these community faculty. To engage them as scholars as well as teachers, it is necessary to understand their interests in and attitudes towards educational scholarship.
Summary of work: Using a grounded theory approach, semi-structured interviews were conducted with a purposive, theoretical sample of 8 physician faculty at the University of Toronto. Emergent themes were identified by the research team through a process of constant comparative analysis.
Summary of results: Community faculty identified themselves as clinician-teachers, but not scholars in medical education. They understood scholarly activity as an academic game related to career advancement. They equated educational scholarship with 'clinical research', thereby excluding themselves from participation in scholarly activities.
Conclusions: While they believed that educational scholarship is important, they did not see the personal or professional value of being involved. They also have an attitude which stemmed from the perception that there was not a direct link between educational scholarly activity and improvement in teaching or patient care.

Take-home messages: It is important to consider the implications of faculty professional identity as well as implicit models of scholarship when developing strategies to engage community faculty in producing educational scholarship.

4W/18
Junior doctors as agents for medical education in a London teaching hospital

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Background: Teaching is crucial within any doctor's portfolio, but easily-accessible teaching opportunities are lacking. Meanwhile, Guy's & St Thomas' are busy London hospitals where students may find it difficult to practise hands-on learning. We devised 'Med Ed', bringing both parties together for mutual benefit.
Summary of work: We designed and implemented a teaching programme complete with curriculum and lesson plans. Pairs of tutors were assigned 4-6 students; each week they practised different clinical examinations on ward patients. Emphasis was placed on doctors providing students with individualized feedback.
Summary of results: Tutors' evaluation of Med Ed: 94%: 'developed my teaching confidence'; 88%: 'refreshed my own examination skills'; 69%: 'boosted my CV'; 94%: 'would sign up again'; Students' evaluation of Med Ed: 100%: 'improved my examination skills'; 93%: 'improved my confidence with patients'; 78%: 'improved my OSCE performance'; 93%: 'would sign up again'
Conclusions: Med Ed's success, evidenced by our outcome data, has seen 150 doctors and 320 students participate in the programme thus far. We are rolling the scheme out to other London hospitals.
Take-home messages: Junior doctors and medical students need regular and meaningful opportunities to teach and be taught. Med Ed provides these and is engendering a culture shift in the importance placed on 'bedside' teaching delivered by foundation level doctors.

4W/19
The Master Course in Medical Education as a Staff Development Program in Angola

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Background: Being aware that a country progress is strongly related to the investment in qualification of human resources, Angola's agenda reveals an investment in empowering medical schools with qualified teaching staff. The Faculty of Medicine of the University Agostinho Neto (FMUAN) in Luanda, Angola, in the scope of an international network, raised a program for faculty development.
Summary of work: Following a 1st edition of a Master Course in Medical Education (MCME), the second edition started at 2011 in a b-learning format, between the FMUAN and the Faculty of Medicine of the University of Porto, Portugal (FMUP).
Summary of results: The program model, its strengths, problems/constraints were evaluated through action-research methodology. A learning platform mediated the learning process, providing student support and active participation with positive impact in educational success. Data collected from the assessment system, revealed that the model of the 2nd edition has increased success levels of approval and satisfaction indicators.
Conclusions: The MCME has promoted a holistic approach to educational issues, providing acquisition of competencies in the pedagogical and research areas qualifying human resources.
Take-home messages: The MCME represents an effective strategy to promote educational quality recognition in medical education in Angola.
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4X Posters: Selection

4X/1
Use of Multiple Mini Interviews for Evaluation of Professional Competencies in Candidates for Admission into a Veterinary Professional Program

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Background: Interviews are frequently used by admissions processes within professional programs to provide additional information regarding a candidate. Historically interviews at the College of Veterinary Medicine (CVM) have been subjective and non-uniform. The candidates were evaluated using eight different scenarios focusing on the following skills: communication, team building, problem-solving, moral and ethical reasoning, and critical thinking. Due to the recent focus on professional competencies within veterinary education, the CVM conducted MMIs in 2009 and 2010.
Summary of work: Due to concern that the interview process would impact academic performances of those students admitted using the MMIs, academic comparisons were made between classes that participated in the traditional interviews versus those who participated in the MMIs.
Summary of results: There were no statistical differences in the overall GPA and science GPA at the time of matriculation nor was there a statistical difference in first semester GPA performance within the professional program.
Conclusions: MMIs are not predictors of academic success, nor failure, within the professional program.
Take-home messages: Utilizing a structured interview to assess competencies other than academic will not impact the quality of student accepted.

4X/2
Gender may represent a selection bias in the Admission Exam (AE) of Brazilian Medical Schools (BMS)

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Background: In BMS, the admission process is solely based on cognitive tests. The number of women both applying and admitted to BMS is increasing. Few studies have been performed to understand the causes of this phenomenon. Could the AE to the medical courses cause a gender selection bias?
Summary of work: The ratios of men and women who applied and were admitted to two well-known BMS (A and B), between 1995 and 2009, were analyzed using Qui-squared. Characteristics of each AE were also evaluated.
Summary of results: Although there were 50% more women than men applying to both BMS, in School B, men were more admitted than women ($p<0.01$). In School A, however, the rate of women admitted was above the expected ($p<0.01$). AE of School A was composed of written questions and had more Humanities in its contents, while School B had multiple-choice tests and valued more the Exact Sciences.

Conclusions: Admission exams might represent a gender selection bias linked to the type and content of the questions.
Take-home messages: Admission exam may represent a gender selection bias in medical courses.

4X/3
Differences in examination performances referring to admission criteria at Hannover Medical School

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Background: In Germany, admission to medical schools is regulated by law. There are different access criteria for applicants: 20% are selected by the overall school grade, 60% by school grades combined with a selection interview and 20% are selected solely by waiting time - that is duration of time since highschool diploma.
Summary of work: We analyzed whether the grades of the groups differ significantly in the first two academic years. ANOVA was used to test differences in four subsequent cohorts. Moreover, the time needed to take an examination was evaluated with regard to the different admission groups.
Summary of results: Students selected solely by school grades have significantly better marks than students of other admission groups. Students selected by waiting-time show in two cohorts lower marks than interview-selected fellow students. With regard to time needed to take examination, preliminary results show that waiting-time students need more time than the other groups.
Conclusions: According to their selection criterion, admission groups differ in examination performances in the first two academic years as well as in time needed to take examination. Eventually, effect sizes are small and grades are no sufficient predictor for later professional performances.
Take-home messages: School grades predict medical grades to a certain extent.

4X/4
What Makes a Good Medical Student? Judgement of Social Competencies Via Online-Self-Assessment

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Background: Since the 70s educators have searched for useful approaches to integrate social competencies in medical student selection. The situational judgement test (SJT) surmounts the disadvantage of traditional and modern interview formers needing high personnel resources.

Furthermore the use of an SJT as self-assessment-instrument reduces the problem of social desirability.

Summary of work: 1. Identification of essential social competencies of medical students through questionnaire sent to 250 physicians all over Germany. 2. During workshops in April 2012 an SJT will be developed by psychologists, physicians, nurses and students at the Medical Faculty of Heidelberg for the social competencies rated as most important.

Summary of results: 128 physicians all over Germany have rated 6 social competencies as most important for medical students: self-discipline, self-reflection, respect towards others, the ability to criticise and accept criticism, the ability to establish contact with others. An SJT integrating medical situations to these competencies will be developed in April and presented at the AMEE conference.

Conclusions: After comprising specific situations reflecting essential social competencies, the SJT will be validated.

4X/5
Admissions: Widening Participation in Greater Manchester - Pilot Study

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Background: Medical schools remain dominated by students from higher socio-economic groups, with only 10% of medical students being in the three lowest. Increases in undergraduate tuition fees may deter potential applicants.

Summary of work: We describe a widening participation programme run by medical students, comprising workshops and clinical experience days for Key Stages 3-5. The scheme aims to encourage equal opportunities in medicine across socio-economic groups, providing advice and support to aspiring students and to run events which build links with and between local schools.

Summary of results: Pupils enjoyed the sessions and found them useful. Those with a pre-existing interest in medicine reported greatest utility. Current sources of careers information were described as inadequate, and the scheme was deemed a valuable source of careers information to all pupils, particularly those in KS5. Up-to-date admissions information can be provided to teachers and benefit pupils not in attendance.

Conclusions: Medical student led sessions may be effective in stimulating interest in medical careers among schools students.

Take-home messages: Peer-led practical workshops deliver both enjoyment and utility to school pupils of all ages. Peer-

led sessions provide a useful source of information and medical role models.

4X/6
Admissions interviews: how important are they in selecting prospective veterinary students?

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Background: Interviews form part of the selection process in many veterinary and medical schools. Aim: to evaluate the influence of the interview on selection decisions at the University of Edinburgh.

Summary of work: Selection panels (chair and co-interviewer) independently evaluated the applicants before interview on the basis of their written application. The applicants were then interviewed and the selectors repeated their evaluations, both independently and after joint discussion. The results of the pre- and post interview evaluations of the applicants were analysed statistically, including the use of the Kappa statistic.

Summary of results: There was slight to moderate agreement between the chair and co-interviewer on selection decisions/rankings taken before interview but substantial agreement after interview. The agreement between post interview decisions/rankings and consensus decisions/rankings post interview was extremely high. The impact of candidate attributes and performance was further explored and certain attributes had more influence on selection decisions than others.

Conclusions: There was significantly more agreement possible between interviewers with regard to selection decisions based on interview assessment compared to pre-interview assessment of written applications. The interview process influenced selection decisions and rankings of candidates.

Take-home messages: This study suggests that the interview process for selecting veterinary students is important in facilitating decision making and is a useful selection tool.

4X/7
Academic and non-academic selection criteria in predicting medical school achievement

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Background: We recently developed a two-step selection procedure, consisting of a non-academic (1) and an academic step (2), which selected students with a 2.6 times lower risk of early dropout and a higher clerkship GPA than lottery-admitted controls. Here we compared the relative importance of selection step 1 and 2 in explaining these differences in student achievement.
Summary of work: We compared performance of students admitted by lottery (2001-2004) with that of three groups of selected students: students who 1: applied to the selection procedure; 2: were selected in step 1, and 3: in step 2.
Summary of results: Selection step 1 and 2 were independent. Group 1 showed a 4.4% lower dropout rate, than lottery admitted students, which increased to 5.2% after step 1 and to 8.7% after step 2. Clerkship GPA was significantly higher for group 2 students than for lottery-admitted controls and this remained significant after the rejection of students on academic criteria in step 2.
Conclusions: The lower dropout rate of selected students is related to self-selection of applicants and mostly to the academic selection step 2. The higher clerkship GPA of selected students was almost exclusively related to the non-academic selection step 1.
Take-home messages: Non-academic selection criteria predict clinical functioning of medical students.

4X/8
Differences of learning outcomes between medical students in urban and rural areas

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Background: The resources of learning are different between urban and rural areas. We explored the possible impact factors of learning outcomes between medical students in urban and rural areas to guide the future selection of medical students or innovation of related curricula at high schools and/or medical schools.
Summary of work: From 2003 to 2009, 696 medical students in Medical School of Chang Gung University were enrolled for comparison of their different characters, academic performance, and conducts between urban and rural areas. Urban areas were defined as the school addresses located in five cities directly under Executive Yuan, Taiwan.
Summary of results: The majority (80.9%) of medical students came from urban areas. Medical students in rural areas got higher scores in general physics, calculus, general chemistry and organic chemistry. Those in urban areas had higher scores in pediatrics. More male students came from rural areas and students in rural areas participated in more arts/skills student clubs. The records of demerits were significantly higher in medical students of urban areas.
Conclusions: The distribution of medical students is deviated to the urban areas. Medical students in rural areas may have better performance in basic science and less records of inappropriate behaviors.
Take-home messages: The present selection methods of medical students in Taiwan are advantageous in students in urban areas who might have worse performance in basic science and usual conduct.

4X/9
Perceptions of Students on Selection Interview

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Background: In International Medical University, student selection of both medical and dental programmes include interview process besides taking account of the students' academic achievements. Previous study conducted on the perceptions of the faculty revealed questionable validity and reliability of the interview score, and a need to modify the interview process.
There was a plethora of literature supporting the use of the selection interview to assess non-academic attributes of applicants. The present study tried to explore the perceptions of students toward the interview process.
Summary of work: Students from Semester one medical and dental students were given a questionnaire to find out their perceptions on the selection interview. To increase the validity and reliability, Focus Group Discussions were conducted with these students for further exploration of their perceptions.

Summary of results: Quantitative data were analysed using SPSS software, and qualitative findings were presented according to the pre-set categories.

Conclusions: Students' perceptions of the selection interview are valuable and should be taken into consideration to improve the existing interview process.

Take-home messages: Students are the center of every education programme. Students' views on every education process are valuable and serious consideration is needed to improve the process.

4X/10
Comparison of academic achievement between graduate-entry and non-graduate entry medical students in Seoul National University College of Medicine, Korea

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Background: The graduate-entry program has been introduced in our medical school, and equal numbers of graduate-entry (GE) and undergraduate-entry (UE) students have been admitted every year since 2009. This study compared the academic achievements of GE and UE students.

Summary of work: We analyzed the marks of the three cohorts (classes 2009-2011; GE = 206, UE = 235); that is, three-year marks for class 2009, two-year marks for class 2010, and one year marks for class 2011.

Summary of results: UE students showed higher annual average marks. Furthermore, the difference of the average marks diverged as year went for the classes 2009 and 2010. From a standpoint of each subject, UE students overtook GE students constantly and most remarkably in Anatomy. Meanwhile, GE students showed better marks than GE students did in Patient-Doctor-Society II, III, IV, and V, which are held through the school years 1 to 3, dealing with contents other than biomedical sciences such as informatics, interviewing, medical ethics, patient behavior and care, etc.

Conclusions: The overall lower performance of GE students shown in this study is contradictory to those previously reported in Australia and England. This contradiction might come from the differences of social environments among the countries.

Take-home messages: Curriculum that reflects the difference of two groups should be developed.

4X/11
Medical school admission criteria and students' performance: ten-year experience of a Lebanese medical school

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Background: Medical schools use different criteria to select new students. The Medical College Admission Test (MCAT), undergraduate Grade-Point Average (GPA) and interviews are widely used by schools adopting the American system, including our 10-year-old school in Lebanon. Some consider MCAT and GPA insufficient despite evidence of good correlation with future performances. We studied the correlation between our admission parameters and students' performance in medical school.

Summary of work: Retrospective review of students' admission records, in addition to their rankings in the four years of medical school, as measure of performance.

Summary of results: We analyzed data on 459 students. Most of our students were male (67%) with a biology major (85%). Performance in MED-I significantly correlated with the interview grade, GPA, premed courses' average, MCAT-biology, physical and writing, GPA having the strongest correlation (r=0.42). In MED-IV, higher class rankings correlated to the same parameters except MCAT-writing and physical, "interview grade" being the strongest (r=0.361). After adjustment using ordinal regression, factors that remained associated to better ranking in MED-I were undergraduate GPA, MCAT-biology and having a major in biology. In MED-IV, undergraduate GPA (OR=1.27) and interview grade (OR=1.48) were the main predictors.

Conclusions: Changes that will soon affect MCAT might improve its capacity to predict performance in medical school; still, undergraduate years' averages and the admission interview remain of significant value, mainly in the "clinical years".

Take-home messages: In selecting future students, undergraduate performance spread over years and personal characteristics remain an essential complement to a one-shot test.

4X/12
Are You Choosing The Right Students? An Inter-professional Look at Admissions

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Background: There is growing evidence of the importance of relational, affective, and moral qualities/competencies of health providers. However, admissions are traditionally based

primarily on the cognitive achievements and personal interviews with very little focus on non-cognitive abilities.

Summary of work: Multiple Mini-Interview (MMI)© is an admissions methodology for the assessment of non-cognitive qualities. While MMIs are well established in the admission cycle for medicine, there is little evidence regarding the preparation, organization, and use of MMIs for other healthcare professions. Using iterative focus groups of students, faculty, and clinical educators, The Michener Institute developed eight non-cognitive competencies that were shown to be reflective of multiple healthcare professions. Three equivalently weighted mini MMI 'banks' of eight cases were developed to measure the non-cognitive skills of prospective students. Eligible prospective students for all Michener programs now participate in a single combined MMI.

Summary of results: The resultant MMI score contributed 50% to the total admission rating. As of 2011, 2055 candidates have participated in the exercise.

Conclusions: Successes and challenges, as well as recommendations for implementing a large-scale MMI admissions process were elucidated; studies assessing the impact of MMI on student success are underway.

Take-home messages: The challenge, and importance, of quantifying the relational, affective, and moral qualities/competencies of future health providers.

4X/13
Effectiveness of two-stage intensive interview for recruiting suitable medical students in Taiwan: A prospective study

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Background: Since 2004, a new selection process which utilized a two-stage intensive interview in addition to previous College Entrance Exam was introduced into the Medical School of Taipei Medical University.

Summary of work: To evaluate the outcomes for two parallel cohorts of students who receive or not receive of the two-stage intensive interview from 2004 to 2011. The main outcome measures were assessed by weighted average mark for each academic year level for total 810 enrolled medical students; together with results in two groups, defined as 'entrance exam'-based and 'interview'-based.

Summary of results: The group selected through an interview showed significantly better on academic performance, have stronger willing to work on medical research, higher percentage to serve in extra-curriculum, and less rejection rate, etc.

Conclusions: Various statistical results suggest that two-stage intensive interview is an effective recruitment method.

4X/14
Selection of medical students in Taiwan: change is difficult

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Background: Selecting appropriate medical students for the future is critical. With the revolution of student selection in Taiwan, this study was to investigate the national status of student selection and the related problems.

Summary of work: Admission criteria from the 12 medical schools in Taiwan were reviewed and surveys distributed to each school in 2010 and 2011. A focus group of school representatives then met for validation and communication on the topic of student selection.

Summary of results: All the medical schools applied multiple assessment modalities. Interview-based procedures were used in 9.6% to 70.4% (mean: 41.7 ± 13.7% in 2010, and 37.9 ± 18.9% in 2011) of the applications. The candidates were invited, solely based on the JCEE score (the General Scholastic Ability Test). The personal file contributed only 0~10% to the final scores. Multi-mini interviews were commonly applied in many schools. Solutions to overcome prejudice against those living in rural areas and ethnic minorities seem to have failed.

Conclusions: Currently in Taiwan, scores of JCEE remain the key determinant in selecting students, although multiple assessment tools have been applied. The real change of student selection is deemed difficult in Taiwan.

Take-home messages: There is a need to convey the barriers and to develop a set of sound examinations in order to achieve the goal of selecting good physicians for the future.

4X/15
Examining the reasons behind choosing medical schools: factors involved in making a decision to study at a particular University

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Background: Medical education throughout universities varies between lecture and Problem Based Learning. We wish to see if the structure of education is important for prospective students choosing to study medicine.

Summary of work: The SAMPLE Medicine project allowed students to experience various medical education teaching styles. We wished to examine perceptions of education styles as well as the importance placed on the structure of medical education in regards to choosing a university.

Summary of results: 1. Students reported that organisation and content of the course was important to them.

2. Hands on practical work was reported to be the most enjoyable event, whereas Lectures were reported to be less enjoyable.

3. Students prefer an integrative education with both Problem Based Learning and Lectures, but comparing just the two, students prefer Problem Based Learning.

4. Students expressed a strong desire for early patient contact and cadavers for dissection.

Conclusions: Students do place importance on the layout of their medical education; the strong desire for early patient contact and preference towards practicals suggests preference for practical courses such as that offered by Problem Based Learning.

Take-home messages: 1. Students prefer an integrative medical course; 2. Out of lecture based and problem based learning, students prefer a more practical course.

4Y Posters: Postgraduate Training 2

4Y/1
Quality of life of resident doctors in Songklanagarind Hospital

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Background: The World Health Organization (WHO) developed the World Health Organization Quality of Life Assessment (WHOQOL) and WHOOQOL-BREF. In Thailand we use WHOOQOL-BREF-THAI, which includes four quality of life domains. This paper evaluates the quality of life of resident doctors. The study is a cross-sectional descriptive study. WHOOQOL-BREF-THAI was sent to 264 resident doctors in Songklanagarind Hospital. The quality of life score was classified into 3 classes: bad, average or good.

Summary of work: One hundred and thirty two doctors (50.0%) completed the questionnaires. The score respectively for the overall quality of life, physical domain, psychological domain, social relationships domain, environmental domain in the average/good levels were 74.6% and 22.0% , 72.1% and 27.1%, 68.8% and 25.6%, 72.8% and 23.2, 70.5% and 22.5%. The person Chi-Square showed significant correlation among the 4 domains.

Summary of results: The results showed that most resident doctors had an average to good quality of life and there was significant correlation among the 4 domains. Therefore, the questions in the 4 domains that scored low should be improved at the same time.

Conclusions: The four quality of life domains should be improved at the same time.

Take-home messages: Good quality of life is important in improving the workplace environment and medical services.

4Y/2
Resident Work Hours at McMaster Children's Hospital: Are We There Yet?

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Background: A growing body of international evidence is illustrating the impact of resident work hours on patient safety and resident wellness. In response, many countries have enacted limitations on resident work hours. Resident associations in Canada negotiate work hours as a condition of employment, with most residents working maximum 24-hour shifts, plus patient handover time.

Summary of work: In June 2011, a Quebec arbitrator declared the 24-hour shift a violation of human rights, giving hospitals 6 months to comply with maximum 16-hour shifts. However, well in advance of similar rulings reaching other provinces, the Pediatrics program at McMaster University in Hamilton, Ontario adopted an innovative approach to scheduling that has been well-received by residents and the department alike. The incrementally-implemented night float system applies to all senior residents as well as junior residents on certain rotations. Residents group their overnight shifts, working 16-hours on alternate nights for a 2-week period.

Summary of results: Benefits include better-rested residents, better continuity of care, and theoretically fewer patient errors without compromising the educational program.

Conclusions: The next challenge will be extending night float to all residents in the department. McMaster's system serves as a model for programs in Canada and abroad dealing with the challenge of resident work hour reform.

4Y/3
Educational value of the on-call experience in pediatric cardiac intensive care: trainee perspective

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Background: Patients admitted to pediatric intensive care units (ICUs) during evening hours have higher odds of death, particularly for children admitted with shock, congenital heart disease, or cardiac arrest. Data suggest poorer outcomes for patients cared for in ICUs with house staff, prompting recommendations for 24/7 in-house intensivist coverage. Our study's purpose was to elicit trainees' perspectives on the educational value of their current overnight on-call experiences in our pediatric cardiac ICU, prior to initiating 24/7 cardiac intensivist coverage.

Summary of work: A survey consisting of 4-point Likert scale and open-ended questions was administered to all 2nd (n=6) and 3rd year (n=5) pediatric cardiology fellows at the study institution in January 2012.

Summary of results: Participation rate was 100%. All fellows "strongly agreed" that the overnight call experience benefited their education. All fellows "agreed" or "strongly agreed" (mean=3.4) that they were well supported by intensivists taking home call. Fellows characterized their current level of autonomy as appropriate and "very valuable" to their education. Fellows' identified only two scenarios – codes and simultaneous multiple unstable patients – warranting the presence of in-house intensivists.

Conclusions: Fellows attribute educational value in the current overnight on-call experience. These findings can guide and promote appropriate on-call learning environments.

4Y/4
Learning anaesthesiology – not just science but also an art

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Background: The literature concerning learning in anaesthesiology is scarce. It focuses on the given circumstances of learning and observable outcomes, not on the perceived learning process. The aim of this project is to increase the knowledge and understanding of the tutor as a teacher/facilitator.

Summary of work: Six anaesthesia residents were interviewed concerning their thoughts about undergraduate and specialist education. A semi-structured interview was designed with twelve questions. The questions were also formulated in a way to encourage for unstructured response The transcripts were analysed using inductive content analysis.

Summary of results: Two themes, Given circumstances to learning and Learning Methods were identified as crucial to the residents learning process. The most important finding was the extent the residents took responsibility of their own learning. They set great demands for the tutor's interpersonal skills and they need facilitating in order to progress as life-long learners.

Conclusions: Our residents need optimal challenges, interpersonal involvement in learning and opportunities to evaluate their own learning. They have ambitious learning goals and it will take a lifetime to achieve them.

Take-home messages: To facilitate and improve the learning we should focus on creating learning environment that supports development of residents intrinsic motivation and autonomy.

4Y/5
Do resident patients utilize Convenient Care Clinics more than staff patients?

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Background: Graduate medical education training requires residents to care for a group of patients in a longitudinal or continuity practice. However, an individual resident may attend clinic only 1-2 half days each week. The proliferation of convenient care clinics provides another alternative for these patients and potentially threatens the continuity experience for these learners. We sought to determine whether there was a differential use of these CCC by resident patients in comparison to staff patients.

Summary of work: Our study was a retrospective review of 21,590 CCC visits that occurred in 2009. We compared resident panels in family medicine, pediatrics, and internal medicine who provide primary care with the panels of staff in the same areas. Patients who made multiple visits to CCC were divided by age into two groups, those under 18 years of age and those 18 and older. Multivariate analysis was used to analyze and compare the characteristics of the resident and staff panels.

Summary of results: The study group included 12,398 of the 21,590 CCC visits. Overall there was no significant difference in the utilization of CCC in resident paneled patients compared to staff patients.

Conclusions: Resident patients do not utilize CCC more than staff patients for repeated visits.

Take-home messages: Convenient care clinics do not appear to impact longitudinal care of patients by residents.

4Y/6
A sepsis masterclass for 4th year medical students

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Background: The ethos of student masterclasses in Sheffield are summarised as: Facilitation of complex self-directed learning by self explanation, rejection of specious explanations, correct explanations being selected, reinforcement of explanations during group discussions, all guided by a teacher (Master).

Summary of work: Thirteen final year students participated in this programme of self-directed learning on the subject of

'Sepsis', during 5 sessions held over a period of five weeks in Spring 2011.

Summary of results: My poster presents a description and assessment of the programme from the teacher and students' perspectives.

Conclusions: A visiting academic from another science faculty at the University of Sheffield was surprised by the breadth but lack of depth of the medical syllabus and observed: "Medicine is not a real graduate-level programme; it's like taking 50 GCSEs (UK exams for 15 year old schoolchildren) all at once". So our final year 'Masterclass' program is designed to address a perceived lack of complex learning abut also to contribute to producing excellent F1 doctors, the major objective of the Medical School.

Take-home messages: Sepsis is a common condition in acute hospitals and a condition in which recognition and appropriate management is life-saving. This programme was designed to reinforce the complex learning required to ensure that F1 doctors are equipped with the appropriate expertise.

4Y/7
Transition into Leadership: Helping junior trainees move into their senior roles

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Background: Run through training was designed to flow seamlessly but a significant leap in the training from ST3 (junior) to ST4 (senior) has been overlooked. Trainees feel that there is little training to prepare them for this change, leaving them anxious and feeling vulnerable.

Summary of work: Our three part training programme, "Transformation into Leadership", was designed following a questionnaire and focus groups with ST1-4 trainees. Registrars having recently made this transition formed the majority of the faculty. The course addressed core knowledge, attitudes and behaviour as well as empowered change.

Summary of results: Evaluation results indicated that the shared learning environment and cross-pollination of ideas was vital. Trainees gained an increased understanding of their future role and identified individual areas for development, leading to the integration of new learning, creation of local change and challenging previous expectations.

Conclusions: The transition, from ST3 to ST4 is an important millstone in a doctor's career, which has largely been overlooked. This course addresses this transition and teaches key components required along with greatly increasing trainees' confidence.

Take-home messages: Our structured program engenders enthusiasm and empowers doctors embarking on this transition.

4Y/8
The amount of bedside teaching of Specialist Registrars in Rehabilitation Medicine during hospital-ward consultations

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Background: With the introduction of the new specialist training plan in Rehabilitation Medicine: 'BETER', a review of current teaching activities is needed. Specialist Registrars training includes consultation of inpatients with a variety of diagnosis. Active learning will increase the demand for supervision during hospital-ward consultations.

Summary of work: Evaluation of the need for bedside teaching on demand by Specialist Registrars during hospital-ward consultations. In 2010 SpecReg of all 4 training years were included in the study during their hospital training at the Groningen University Medical Center. An on-line database of hospital-ward consultations with patient data and consultations characteristics was used. Daily review of consultations by staff, and demand for bedside teaching was evaluated.

Summary of results: Subjects Spec Reg 7 (1-2 nd year) ;10 (3-4 th year)
Patients (N=643): 43% neurology;30% ortho / trauma;12% low back pain; 8% organ problems;7% children (<18 y)
Supervision characteristics: Demand for supervision
Overall 1-2 y registrars: 62/582: 11%. 3-4 y registrars; 29/290: 11%
Reasons for beside teaching: To meet expectations patients: 50%;
Face opposed opinion by ward doctor 40%; Self confidence:40%
Supervision characteristics: Demand for supervision Overall 1-2 y registrars: 62/582: 11%. 3-4 y registrars; 29/290 : 11%
Reasons for beside teaching: To meet expectations patients: 50%; Face opposed opinion by ward doctor 40%; Self confidence:40%

Conclusions: In 11 % of the consultations bedside supervision by staff has been given. Junior Specialist Registrars do not ask for more supervision compared to senior registrars. Lack of knowledge and expectations of patients influence the reason for bedside teaching.

Take-home messages: Special attention needs to be given for reasons for bedside teaching by junior and senior registrars.

4Y/9
Evaluation of a palliative care education for primary care residency: results of a prospective study

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Background: Despite pervasive evidence of palliative care needs, medical education programs struggle to implement effective training programs.

Summary of work: Prospective study of a palliative care educational program with five cohorts of residents in eight primary care programs. The curriculum included hospice rotations, reflection, a standardized patient exercise, and on-line Education for Physicians in Palliative Care modules. Analyses included ANOVA of residents' performance prior to, immediately after, and at program completion on established knowledge (α=.96), attitudinal (α=.95), and self-assessed competency (α=.95) measures. Independent t-tests compared hospice referral patterns of alumni to non-alumni for 1,204 patients.

Summary of results: Participants included 100 Family Medicine and 185 Internal Medicine residents. Performance on knowledge ($F6,278=243.9,p< 0.001$), confidence ($F6,278 = 26.7,p < 0.001$) and attitudes ($F6,278= 41.7,p < 0.00$) improved significantly. Physicians trained in our residency program admitted patients 18.5 days earlier ($t=174.6, p< 0.0001$).

Conclusions: Participants included 100 Family Medicine and 185 Internal Medicine residents. Knowledge ($F6,278=243.9,p< 0.001$), confidence ($F6,278=26.7,p < 0.001$) and attitudes ($F6,278= 41.7,p< 0.00$) improved significantly. Compared with peer physicians, physicians trained in our residency program admitted patients to hospice 18.5 days earlier ($t=174.6, p<0.0001$).

Take-home messages: A structured palliative care curriculum provides residents education associated with improved palliative care.

4Y/10
Confidence levels of internal medicine trainees in rheumatological skills and diagnosis: A Singapore perspective

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Background: Musculoskeletal (MSK) disease is common in clinical practice but many physicians are not confident managing them. This study aims to assess confidence of internal medicine (IM) trainees in our institution in rheumatological knowledge and skills and determine factors affecting this.

Summary of work: A web-based survey was sent to IM trainees by email. A 5-point Likert scale was used to capture confidence levels of trainees across specialties and conditions. Perception of difficulty of specialties, year of training, rheumatology exposure and interest as a future career were also captured.

Summary of results: 71.6% of trainees responded. Exposure to rheumatology was poor with 81% never having done a rheumatology posting. Self-confidence in rheumatology knowledge and examination were lower than other core specialties at 2.31+/-0.94 and 2.67+/-0.87 respectively and trainees rated rheumatology as the most difficult specialty (p<0.05). When we evaluated factors affecting confidence, only doing a rheumatology posting significantly increased confidence in knowledge, examination and decreased perception of difficulty. Being taught the GALS screen did not affect confidence in examination.

Conclusions: Overall confidence in rheumatological skills and diagnosis was poor and may be increased with rheumatology postings.

Take-home messages: We should accord more attention to improving rheumatological skills in IM trainees.

4Y/11
Junior Doctors' Views and Perceptions of Wound Management: Time for a re-appraisal?

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Background: Complex wounds such as pressure sores & ulcers affect a significant proportion of inpatients & have a large impact on both morbidity and healthcare funds. However, teaching on recognition and management of complex wounds is not currently part of the curriculum for medical students or the post-graduate Medical Training in UK.

Summary of work: We invited foundation year (FY) doctors in 2 hospitals in SE London to participate in a survey exploring their previous exposure, knowledge and interest in developing their training in wound management.

Summary of results: 51 doctors responded, (100% response). 58% reported feeling either confident or very confident in managing wounds. However the results demonstrated poor knowledge and understanding. Only 3 identified the 5 available options for effective wound healing and a third were unable to correctly state when wounds should be debrided. Knowledge regarding use of dressings was weak, particularly use of vacuum pumps. 76% of junior doctors expressed interest in receiving teaching &/or attending course on wound management.

Conclusions: Wound management appears to be a widely ignored area of clinical training. Given its high incidence, and trainees' enthusiasm & interest in the subject, we recommend implementing a short training programme across hospital Trusts and its inclusion in the post-graduate curriculum for CMT.

4Z Posters: Curriculum Development

4Z/1
The implementation of premedical program for medical school freshmen

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Background: With the increase in the amount of learning, many students feel difficulty in adapting to their school life and may fail to progress to 2nd year. The purpose of this study is to develop programs helping medical freshmen adapt to their first-year of school life
Summary of work: The premedical program included the following: 1) adaptation to medical school curriculum: medical terminology, osteology, learning style; 2) preparing for becoming a doctor: living a life as a doctor and resident, what is good doctor? 3) self-management: stress management, time management; 4) introducing student management program,
At the end of the two weeks course, we evaluated the program by questionnaire using 7-point Likert scale.
Summary of results: Of 44 students, forty-three students answered the questionnaire, twenty-three students were male, and twenty were female. The mean age was 26.9±2.9. The general satisfaction score was 5.67±0.77. Students preferred osteology, time management and a doctor's life in sequence. The preference was different by their undergraduate major.
Conclusions: The satisfaction of premedical program of freshmen was positive. Students preferred time management and a doctor's life as well as osteology in premedical program.

4Z/2
Vertical Integration - possibilities and obstacles

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Background: Increasing pressure on clinical training placements for medical students in their final years of training has prompted the consideration of other models of clinical training such as Longitudinal Integrated Clerkships, community-based placements and vertical integration of learners.

Summary of work: This small study examines the learning and teaching experiences of students, junior doctors, registrars and their supervisors working together in rural Queensland practices and hospitals over a three to twelve month period. The sites investigated are all part of a Longitudinal Integrated Clerkship program that is a collaboration of two universities. In-depth interviews with every level of participant at five rural sites were conducted.
Summary of results: Thematic analysis of the resulting transcripts has provided practical, philosophical and political insight into vertical integration in the General Practice setting and its possibilities and obstacles.
Conclusions: Vertical integration can improve the efficiency and learning of those training and teaching in the general practice setting.
Take-home messages: This study will provide those involved in the clinical training of multiple levels of learners, Longitudinal Integrated Clerkships, and community-based placements an opportunity to reflect on how they can reduce their training workload and provide enhanced learning opportunities for both themselves and their trainees.

4Z/3
Do students learn to apply core knowledge later in the course? Evaluating clinical tutors' perceptions of required anatomical knowledge

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Background: The integration of clinical and anatomical sciences within a spiral curriculum has been relatively straightforward for the early years. However, integrating anatomy learning in clinical placement has proved more challenging. Clinicians and students value the anatomy learning when applied to clinical problem-solving for it encourages knowledge retention.
Summary of work: We surveyed clinical tutors on: (i) curriculum learning objectives in anatomy, (ii) whether they reinforced and contextualised anatomy in practice, and (iii) teaching and methods and materials they used.
Summary of results: Results including qualitative data from clinicians [n = 94] are discussed; while they were confident to teach anatomy relevant to their speciality, the majority were not familiar with the learning objectives delivered in the early years. Respondents acknowledged that an anatomy theme running through the curriculum contextualised learning of the early years and was beneficial for both knowledge and skills development.
Conclusions: Integration of anatomy in clinical placement learning was facilitated by clinician tutors knowing the

minimum standards of anatomy knowledge they should expect of students on placement.

Take-home messages: When the precise expectations for anatomy learning in placement modules are articulated, and the learning objectives delivered in multiple formats and 'signposted', it ensures the teaching and integration of anatomy in practice.

4Z/4

Social Pediatrics rotation and Social Responsiveness Project: experience of pediatric residents at Prince of Songkla University, Thailand

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Background: According to The Royal College of Pediatricians of Thailand requirements, a 1-month rotation in "Social Pediatrics" is compulsory for pediatric residency training. During the 1-month Social Pediatrics rotation in the Department of Pediatrics, Prince of Songkla University (PSU), the residents are assigned to do a field work at a Primary Care Hospital for Maternal and Child Health, and attending at 8 health service organizations for children.
In 2009, the Social Responsiveness Project was initiated. In 2010, the pediatric residents organized this Project under the supervision of the Postgraduate Unit. The residents scheduled to visit the children in Chanviroj community every 3-4 months.

Summary of work: After 2 years of Social Responsiveness Project, the pediatric residents evaluated their satisfaction with both the Social Pediatrics rotation and Social Responsiveness Project by filling in a questionnaire.

Summary of results: All the residents responded to the questionnaire. They indicated overall satisfaction with both Social Pediatrics rotation and Social Responsiveness Project with an average Likert score of 4.5/5.0.

Conclusions: The satisfaction of the pediatric residents indicated the Social Pediatrics rotation including Social Responsiveness Project is a useful teaching program.

Take-home messages: The pediatric residents have exposed to the children in difficult situations, and learn how to support/supervise them to look after their future lives.

4Z/5

Final medical students' perception for change in clinical teaching strategy

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Background: University of Kassala Faculty of Medicine & Health Sciences curriculum is discipline-based and teacher-centered that is featured in traditional medical schools. Students are taught the theoretical part in large group lectures (100-140 students) and the practical classes in relatively small group (25-35) and had their final examination at the end of the year in all subjects.

Summary of work: Clerkship rotation, that is student centered and workplace based was implemented. Students rejected the change at the start with a strike, then they showed high satisfaction at the end.

Summary of results: This is a descriptive cross sectional study on the perception of 140 final year medical students on their perception of change to students' centered clerkship rotations. The shift was from didactic demonstration of clinical cases to large group, to student centered, with guide book, daily logbook entry and student-teacher feedback sessions. 86% of students consider the program objectives are clear. 97.8% consider it is better. Students' opinion about logbook varies, but 63.7% agreed it should be continued. Generally, students gave positive perception about teaching strategy and assessment.

Conclusions: Shifting towards student centered learning in medical school with teacher centered learning strategy will be challenged by students' rejection. Students may have different attitude after implementation.

4Z/6

Current curriculum for Kampo (traditional Japanese) medicine in Japanese medical schools

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Background: There is no precise survey of the current curriculum for Kampo medicine at medical schools across Japan.

Summary of work: We conducted a postal questionnaire survey involving the 80 nationwide medical schools to identify the problems for the firm establishment of Kampo education.

Summary of results: There were 80 effective responses (100%). 1) The frequency of Kampo lecture class during the 6 undergraduate years ranged from 0 to 25. At least one class is conducted by 98%; 4 or more, 84%; 8 or more, 44%; 16 or more, 5%. 2) 29% of schools employ full-time instructors for Kampo education. 3) Traditional medicine is taught on the ground of Kampo medicine by 80%. 4) A textbook is used by 24%. 5) 74% of schools consider the use of a standard textbook if any. 6) FD is executed by 33%. 7) Regarding the contents to be taught, characteristics were selected by 94%, basic concepts 84%. 8) Among the problems to be solved, curriculum standardization was selected by 65%, fostering of leaders 65%.

Conclusions: The effort toward Kampo education widely varies among schools. Future establishment of Kampo education requires solving several problems, such as curriculum standardization.

Take-home messages: Curriculum standardization and fostering of leaders are important to establish traditional medicine education.

4Z/7
Development of preliminary course in undergraduate medical curriculum

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Background: Preliminary course in SNU has undergone a startling change through taking charge of its management in the college of medicine, shifting from college of natural sciences. Therefore, SNU medical school decided to change and develop preliminary course in order to strengthen premedical education.
Summary of work: First, we went over the current state of preliminary course in SNU and other schools abroad to identify the problems of the former. A survey was conducted to clarify those problems and to organize principles for reformation based on its demand. Subcommittees were composed according to each of those principles.
Summary of results: The survey result and data research resulted in the list of principles of its preliminary course development. The development should consist of establishing clarified educational goals, incorporating customized education, stimulating professors' participation, and focusing on students' nature education.
Conclusions: The list of principles would be able to integrate humanities, social science and liberal education through its development for stimulating students' high medical performance.
Take-home messages: The implementation of this newly developed preliminary course should continually be observed and discussed in order to verify the improved premedical education.

4Z/8
Topping and tailing the students' learning experience

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Background: Topping and tailing the students' learning experience.
Summary of work: Teaching weeks begin with a case presentation providing clinical context for subsequent teaching sessions; anatomy, physiology, pathology, diagnosis & treatment, integrated clinical method and medicine, health and society. The final session of the week consolidates learning and answer any residual student questions. Learning Weeks are 'topped and tailed' by direct contact with patients/carers and the doctors involved in their treatment.
Summary of results: Evaluation of the case forum has revealed that the presence of patients/carers at the end of the week is associated with positive feedback from both patients and teachers. Where it has not been possible to bring in patients/carers then the week, as a whole, is generally less well perceived.
Conclusions: Thus the invitation of patients to the final teaching episode of the week has become best practice in the curriculum. The forums are blueprinted to our exams and it will be possible to assess whether students ability to recall information relating to cases are improved by the presence of a real patient versus a 'paper case'.
Take-home messages: The dissemination of positive student feedback to faculty has been a driving force in improving teaching sessions.

4Z/9
Students' and Faculty Perceptions of Early Patient Contact (EPC) Program in a University Teaching Hospital in United Arab Emirates

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Background: The Early Patient Contact (EPC) program was introduced as an elective posting for the first year MBBS students in the University in 2010. The objective of the study is to determine the perceptions of Medical students and Faculty about EPC program.
Summary of work: The study sample included 50 first MBBS students of GMU, Ajman in the academic year 2010-11& 2011-12 and who consented for EPC posting and faculty members of GMC Hospital. Faculty and Students' feedback were obtained through separate questionnaires at the end of EPC posting based on Likert scales (SA,A,U,D,SD).
Summary of results: Analysis of responses showed that students perceived EPC program increased their motivation to pursue medical profession (98%), realize the importance of documentation (94%), helped them understand the practical challenges (96%) and help realize the importance of professional conduct (94%). Students opined that EPC program made classroom teaching more relevant (80%). Majority of students recommended EPC to be a part of regular curriculum (76%). All faculty felt that EPC makes

classroom teaching of communication skills more relevant and makes students realize the importance of professional conduct. They emphasized the importance of documentation (86%). The faculty were satisfied with the conduct of the program.

Conclusions: Students and Faculty had positive perceptions about EPC program due to its influence on student motivation, professionalism and better communication skills.

Take-home messages: EPC program should be introduced early in first year of medical school.

4Z/10
Narrative Medicine for Medical Students: A Pilot Experience in Chang Gung Memorial Hospital

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Background: Medicine practiced with narrative competence, called narrative medicine, is proposed as a model for humane and effective medical practice. It can aid medical students in understanding their plights.

Summary of work: Our program of narrative medicine began during orientation with a typical lecture explaining the theory and introducing the process. Research subjects were comprised of 106 students, including 86 medical students and 20 medical students of Chinese Medicine in Chang Gung University during the period of February 2011 to May 2011. Using a narrative approach, clerks could write about daily clinical events and encounters, their struggles, and their accomplishments without the critical eye of the preceptor, the attending, or their seniors. We analyzed the characteristics and contents of narrative writing articles.

Summary of results: The attending rate was higher in medical students (86/101=85.1%) than that in Chinese medical students (20/47=42.6%), meanwhile the average rate was 71.6% (106/148). Most of the narrative articles were from pediatric and internal medicine cases. The most common characteristics of articles included patient-doctor relationship (31.1%), reflection (24.5%) and humane (17.0%). Sixty-four percent of narrative articles had self-feedback and were correlated with reflective type (p<0.001). The characteristics of articles were different between medical students and Chinese medical students (p=0.031).

Conclusions: In this pilot experience, narrative medicine can be a useful tool to help clerks adjust to their roles and responsibilities, communicate and share with patients, and work through emotional difficulties.

Take-home messages: Narrative writing can help clerks understand their relationships with patients and form their identities as doctors.

4Z/11
The Health Professional We Want To Train: Learning Goals Pursued by Teachers of Undergraduate Programs

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Background: New curriculum models in undergraduate health programs are trying to redefine the teacher and learner roles, and are replacing the usual cognitive learning goals by other ones that include cognitive, procedural and affective dimension of what a health professional must be. However, many teachers use their personal assumptions and aspirations to guide their work instead of the program curriculum. In this context, teaching objectives that teachers assume are a topic that has to be researched.

Summary of work: A qualitative research (part of research project FONDECYT 1110484) was conducted, according to Grounded Theory method. For this study, 19 teachers of undergraduate health programs were interviewed.

Summary of results: From descriptive data analysis, seven categories were identified: 1) Basic knowledge of health career, 2) Specific knowledge for career, 3) Knowledge application, 4) Decision taking, 5) Professionalism, 6) Adaptability and 7) Autonomous learning.

Conclusions: Outcomes show a complex profile of what is needed to be a health professional. But the profile that is expected for teachers is derived from reflections about personal clinical experience and from informal collective reflections made by teachers' team. Often, the program curriculum does not influence pedagogical practice.

Take-home messages: Common curriculum is the key to convert individual teachers' work in a real professional training process.

4Z/12
An innovative way to promote interactivity in case discussion groups during the first year of medical school

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Background: Goal was to facilitate more interpersonal interaction and foster collaboration and communication in small group case-based learning (CBL) sessions. CBL is a

method of learning where small groups of students meet weekly with a physician to work through a simulated patient case.

Summary of work: In the past, we have found that students find decision-making during CBL cases beneficial to their learning. We implemented decision-making in the case to achieve our goal of facilitating more interactivity in CBL. This was done in 2 ways:

1. Clinical questions were introduced during the CBL that change the outcome of the patient case. This gives "real-life" consequences to the decisions the students make (i.e. what lab tests they order, treatments they give etc).

2. Multiple-choice questions during the CBL that are completed by the group on scratch-cards to tally as an overall CBL group score. This score can be compared online amongst the various CBL groups thereby fostering interaction between various groups.

Summary of results: This updated CBL case will be implemented into the Undergraduate Medical Curriculum this year. Afterwards, the students and tutors will be surveyed in order to guide future changes to the curriculum.

Take-home messages: Decision-making during CBL cases will increase interpersonal interactivity and better facilitate student learning.

4AA Posters: Clinical Teaching 1

4AA/1
A photographic Exhibition: Art, practice and education through simulation

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Background: A collaboration of photographic art, photo-journalism, medical humanities and medical education looking at clinical simulation through different 'lenses' has produced a thought stimulating photographic exhibition with narrative themes. The exhibition will be planned to be launched at AMEE, if accepted and return to King's and London for a rolling exhibition.

Summary of work: The photographs have a narrative theme which stimulates reflection, interpretation and meaning. Some are in a photo-journalism style, some are set up to be quirky images; all were carried out over 4 different photoshoots with different learner groups.

Summary of results: From preview viewings of some of the images, the range of meaning and how people feel about them from the artistic aspect and from the practice aspect is personal and varied. This has encouraged debate and sharing of experience.

Conclusions: We will see what the response is on launching it!

Take-home messages: A highly original quality photo exhibition that demands a second look or re-take. It encourages wider thinking, demands reflection and personal interpretation and meaning.

4AA/2
Teaching burn wound by serial photography

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Background: 6th year medical students have only 2 weeks to attend the plastic surgery unit. It is difficult to understand the conditions that need a long time to heal such as burn patients which is essential for medical students.

Summary of work: In 2009, we began to use serial photography for support burn teaching. Photos of all burns patients were taken at the first admission and then twice a week in the burns unit and when they have any procedures. All pictures were saved in the data information system of the hospital. After medical students login with their password they can see all the pictures (self learning).

Summary of results: Before 2009 less than 50% of students understood and could describe how to treat burns patients. After 2009 more than 80% of medical students understood and could describe the whole process (oral evaluation score > 4/5). All students benefitted and agreed to sustain this program.

Conclusions: Serial photography is realistic and there are many patients in various stage in the burns unit, so they can understand the whole process in two weeks.

Take-home messages: Serial photography can be applied to support teaching in any other diseases.

4AA/3
Developing clinicians: does mentorship matter?

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Background: Mentorship has always played a critical role in learning, particularly in the education of professionals. Although the characteristics and usefulness of mentorship have been frequently described in other fields, mentorship in medicine's clinical context has been largely unexplored.

Summary of work: The objectives of this study were to elicit definitions and potential benefits of mentorship in the clinical context from the perspective of three stakeholder groups (the protégée, the mentor, and the institution that supports the relationship of these two). To this end, individual semi-structured interviews were conducted with 31 participants

from four McGill University-affiliated teaching hospitals. Interviews were transcribed verbatim and analyzed qualitatively to identify themes.

Summary of results: Analysis will be completed in Spring 2012, however, preliminary analysis indicates that mentorship is a critical and complementary form of learning and development for clinicians, particularly with respect to career decisions and lifestyle considerations. Preliminary data also show that learning from a mentor's experience, honest feedback, and a mentee-centered approach were key in effective clinical mentorship.

Conclusions: Mentors provides significant guidance to developing clinicians as they make important career and lifestyle decisions.

Take-home messages: In clinical medicine mentorship is deemed important to trainees in their broad development as clinicians, particularly as it pertains to career and lifestyle decisions.

4AA/4
The contribution of the expert patient in nursing education: a learning experience

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Background: The expert patient is able to cope with the disease, using appropriate forms of education and through experience. The expert patient can make an important contribution to students' learning.

Summary of work: The Bachelor Nursing School in Turin addresses the concepts of therapeutic alliance and empowerment. A learning experience with the contribution of an expert patient, suffering from diabetes mellitus type I, who reported his experience of illness, has been realized. At the end of the meeting individual reflection and small group work was carried out. The goal of this study is to investigate how useful the students perceive and consider the learning experience immediately after having lived through it and six months later. Qualitative content analysis was used to identify categories and themes arising from the data.

Summary of results: The following themes emerged from our data analysis regarding the patient's experience: acceptance of the disease and succeeding in enjoying a good quality of life. Most of the students remember this learning experience as interesting and think it should be repeated with other expert patients.

Conclusions: This methodology enhances learning and helps students to explore their feelings and thoughts.

Take-home messages: The educational involvement of the expert patients can delve into students' understanding of factors influencing health, illness and care pathways.

4AA/5
Involvement of Real Patients in Medical Education: A Conceptual Framework to Guide the Adaptation of Patient Partner Programs to Pediatrics Training

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Background: The value of involving real patients in medical education is increasingly recognized. While a number of patient partners programs have been developed in the adult population, their use as a pedagogical tool in the pediatric context has not been demonstrated.

Summary of work: We developed a framework to guide the adaptation of patient partner programs to pediatric training. Integrating the CIPP model with the Kirkpatrick hierarchy, we identified key considerations for adapting the Patient Partners with Arthritis Program to adolescents with Juvenile Arthritis.

Summary of results: Our conceptual framework reliably accounts for: the pediatric context by evaluating the needs of pediatric trainees, inputs such as factors affecting teens' motivation to engage in the program, processes occurring during program implementation, and differences between adult and pediatric program outcomes.

Conclusions: Patient Partner programs are an innovative instructional strategy promoting patient involvement in medical training. The proposed framework provides a reliable approach to guide the adaptation of such programs to the pediatric context, specifically considering the needs of this population.

Take-home messages: We developed a framework to guide the adaptation of patient partner programs to the pediatric context. While developed in the context of juvenile arthritis, our formulation has broader applicability for other chronic pediatric diseases.

4AA/6
The impact of a Service Learning module on junior Health Sciences students

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Background: Medical students admitted to the Extended Degree Programme (EDP) spend eight weeks shadowing Registrars in the hospital. In 2011, however, student numbers had doubled from the previous year making it impossible to accommodate all of them in the clinical setting simultaneously. Students were divided into two groups; a four week Service Learning (S-L) component was introduced and the time spent in the hospital was reduced by half.

Summary of work: The S-L component consisted of students spending a week teaching First Aid skills at two Secondary schools in underserved areas after having attended First Aid teaching sessions in the Clinical Skills Centre (CSC).

Summary of results: Analysis of qualitative data indicated an overall increase in student motivation in terms of their studies and chosen career path; an enhanced sense of civic responsibility and a better understanding of cultural diversity. The group of students that taught at the better equipped of the two schools identified additional aspects such as group work, - cohesion and self-confidence, in terms of talking in front of others, as areas of growth.

Conclusions: Service learning projects may enhance graduate attributes of junior students.

Take-home messages: Adding a Service Learning component to the curriculum is not only plausible, it is crucial in shaping of future doctors.

4AA/7
Are patients on medical wards satisfied with medical students?

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Background: Meeting and examining patients is an essential part of medical education. This study aimed to investigate patients' satisfaction with medical students on medical wards.

Summary of work: A survey of 492 patients across medical wards was conducted when there were medical student distributed across them.

Summary of results: 294/492 (53%) of patients were enrolled to study. 256/294 (87.1%) of patients were satisfied with medical students. Common satisfied reasons included: 45.3% more reliable, 22.7% many participants and 12.9% education resource. The patients' opinions about benefits from medical students were 68.7% intensive examination, 59.7% more reliable and 50.2% more details in history taking. During their admission, 257/294 (87.4%) of patients spoke with and were examined by more than 1 medical student. There were differences in satisfaction among age groups, education, occupation and admission experience.

Conclusions: Most of our patients were satisfied with our medical students. Age, education, occupation and admission experience had an effect on satisfaction.

Take-home messages: Some patients were not satisfied. Careful patient selection is important.

4AA/8
Residential Aged Care Facilities as medical student work-based learning placements

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Background: Internationally, residential aged care facilities (RACFs) have been rarely used by health disciplines, other than nursing, as clinical placements. This paper presents our findings with regard to the learning and attitudinal outcomes of 20 final year senior medical students who undertook a 1 week clinical placement in a teaching RACF.

Summary of work: A structured program that encouraged students to perform comprehensive medical assessments on residents with a particular emphasis on assessing dementia and understanding their palliative care needs was implemented. Interprofessional learning (IPL) was encouraged.

Summary of results: Student knowledge of dementia and palliative care did not change nor vary from the control group in statistically significant manner. However, students showed an increased readiness for IPL following the placement. Students rated the placement highly and considered the program delivered key learning outcomes.

Conclusions: It is possible to design a program based entirely in a RACF that achieves significant learning outcomes for senior medical students.

Take-home messages: RACFs are an underused, valuable, clinical placement site for senior medical students.

4AA/9
Innovative 3-phase structured bedside teaching

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Background: We introduced an innovative 3-phased structured bedside teaching method to train spinal nurses in complex neurosurgical competencies.

Summary of work: Neuro competency information booklet and a checklist with the required clinical knowledge and practical skills was circulated. In the first phase, staff members identified the patient journey at the bedside. In the

second phase, an actor patient simulated some acute clinical changes, which were identified and managed by staff. In the third phase, staff took self-help sessions guided by the checklist. Pre and post training feedbacks were collected by an online survey.

Summary of results: The pre- training evaluation produced 65% response rate. None of the respondents had an experience in a post pituitary surgery care while 67% never looked after a brain tumour patient. 55% expressed the need for more training in taking neurological observations and Glasgow come scale scoring. There was 57% response rate for post training evaluation. All the respondents either agreed (75%) or strongly agreed (25%) in the training for brain tumour patient care. 63% agreed and 25% strongly agreed with pituitary patient care training. 63% agreed the training reduced anxiety while 100% accepted the bedside training and patient simulation methods.

Conclusions: 3-phase approach provides better practical understanding, reinforcement of skills and knowledge.

4AA/10
What Makes a Good Paediatric Attachment?

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Background: More students, shorter attachments and changing medical practices has challenged traditional ward-based curriculum delivery. Paediatrics, with median ward stays of 1.2 days requires sessions in the emergency department (ED) for adequate exposure to acutely unwell children. However, student access to ED is limited.

Summary of work: Students, on placements at 10 different hospitals were taught clinical skills, had weekly case discussions and teaching rounds. The number of sessions in the ED ranged from 0 to >10 over their placement. Students completed written questionnaires examining educational opportunities, and exposure to acute paediatrics at the end of the 6 week attachment.

Summary of results: 125 of 140 students completed the questionnaire. 84% said they had adequate acute paediatric exposure. These students had more sessions in ED, and rated ED teaching higher. Over 4-6 ED sessions did not increase the proportion feeling they had had sufficient exposure.

Conclusions: Time allocated to ED strongly predicts satisfaction in students in acute paediatrics. Teaching in the ED setting is important, but the overall activity of the department less so.

Take-home messages: Paediatric attachments must be structured to provide at least 4-6 sessions in ED. Their value can be increased by adequate teaching in paediatric ED.

4AA/11
Analysis of the teaching cases for postgraduate-year-one residency training in emergency medicine at a medical center in Taiwan

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Background: All postgraduate-year-one (PGY1) residents received one month of emergency department (ED) training in Taiwan. However, the complaints and acuity of teaching cases in daily ED visits were random. We try to determine if teaching case selection via curriculum of PGY1 residency training reflect the ED daily practice.

Summary of work: This study reviews the contents of teaching cases recorded in the e-portfolios of PGY1 residents training in ED. Patient acuity and initial presentations were abstracted. Residents' satisfaction was also documented.

Summary of results: There were 101 PGY1 residents' e-portfolios with 8614 teaching cases for analyzed. The proportion of teaching cases with high acuity was higher than the annual ED visit cases (38.5% vs 25.9%). The proportion of teaching cases with lower acuity was less than the annual ED visit (61.6 vs. 74.0%). The most common chief complaints of the teaching cases were abdominal pain (15.9%) and shortness of breath (13.0%). In contrast, neurologic related events were fewer (4.5%). Intoxication (1.5%), respiratory failure (1.2%) and shock (1.1%) were least seen. Most of PGY1 residents were satisfied with the ED training program (96.0%).

Conclusions: The acuity of patients for PGY1 residents were appropriate and reflected ED daily practice. PGY1 residents may have experienced variety cases but lacked some of the emergency-related complaints.

Take-home messages: Analysis of PGY1 residents' e-portfolios facilitates the evaluation of training program.

4AA/12
Work-based learning: it is really new?

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Background: Since 1998, Brazil has adopted in its Constitution and deployed the Single Health System (SUS), which guarantees equality, fairness and accessibility to all Brazilians. This challenge led to the Academy the

responsibility to rethink the medical education in association with the international changes in medical schools.

Summary of work: The purpose of this paper is seven related new Medical Residence Programs developed from Healthcare system supported by the University team. Unlike the current proposals where the Academy makes the planning of vocational education of the physician, this proposal came from the Healthcare System, knowledgeable of their human resources needs and local health condition and worked together with the University in order to plan aspects where there could be interesting diverse visions about care in a holistic view in a real context.

Summary of results: The Programs begun in 2010 and have faced some problems such as infrastructural necessities, low involvement of health professionals that are not used to teaching besides their diary activities and are not secure about their own knowledge, needing Continuing Education. Further, how could they be paid for teaching?

Conclusions: In spite of it, continuous trainee assessment and Program Evaluation have demonstrated good results, similar to University Programs.

Take-home messages: Learning by work, is it really new?

4AA/13
Teaching in Intensive care

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Background: Intensive care is a unique specialty with an equal mix of knowledge and skills. Teaching the management of Intensive care is challenging. We report our distinct structured training programme from Paediatric Intensive care unit of Great Ormond Street Hospital.

Summary of work: The training in the unit is an amalgamation of different methodologies and varies from large group to small group sessions. It caters to deliver both knowledge and skills and is up to date with evidence based practice. The programme is structured incorporating the ICTPICM curriculum. The key programme is weekly teaching Modules and Monthly core curriculum consisting 50 modules, which is peer reviewed and updated every two years. The aim of the modules is to enhance self-directed and reflective learning. There are weekly Research/Journal clubs/Mortality Morbidity sessions which provide opportunities to critically appraise journal articles and discuss mortalities. Technical skills are reinforced with Anaesthetic training in theatres. Basics of PICU are incorporated in the curriculum and include Ventilation workshops twice a month and Resuscitation workshops which involve simulatory sessions. Presentations at Various Conferences/ Meetings are strongly encouraged and it is a delight to report numerous presentations over the years.

Summary of results: There is regular evaluation carried out which has shown an increasing enthusiasm and satisfaction with the current teaching structure.

Conclusions: The structued Intensive care teaching curriculum caters to the diverse needs of trainees.

Take-home messages: Structured Teaching curriculum is beneficial.

4AA/14
Undergraduate medical Education: 360° evaluation of a training program for basic clinical skills in surgery

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Background: Clinical skills must be to the fore of medical occupation, especially in surgery, where the mastery of basic skills is of great importance for the young learner. The acquisition of basic clinical skills during surgery clerkships has been shown to be inadequate. This work presents a 360° evaluation of a 4 week training program for basic clinical skills in surgery for 3rd year medical students.

Summary of work: From October 2007 to December 2011 989 students participated in a standardized training program. It consists of one-week training in basic clinical skills in surgery and a three-week clerkship on surgical ward. In their skills training, students rotate through 12 modules for clinical skills. On the ward, students learn to integrate their acquired skills under supervision.

Summary of results: The 360° evaluation consists of students' written evaluation, structured interviews for teachers' evaluation, results of students' self-assessment in comparison to their OSCE results and an assessment regarding programs material and personal needs.

Conclusions: Personal and material needs are high. But the training program helps students acquire basic skills in a safe environment. The teachers approve students increase in interest and motivation, higher confidence and competence in performing skills. Students' self assessment accuracy increases after basic skills training as well as their OSCE results.

4AA/15
The Use of Clinical Cases as a Learning Strategy Encouraging the Transfer of Knowledge

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Background: The School of Medicine in the UNAM recently approved some changes to its curriculum. These changes encourage the use of innovative learning strategies, such as the use of clinical cases which improve academic performance. The purpose of this is to increase the final efficiency in two years of the curriculum.
Summary of work: This is a cross-sectional experimental study in which two groups of students were evaluated through five didactical units. The control group was instructed in the traditional way and the experimental group was instructed using clinical cases. At the end of the instruction, both groups were evaluated through a clinical case with multiple choice questions.
Summary of results: A t student test was used with a p< 0,05 and the group using clinical cases proved to have a better performance.
Conclusions: The use of clinical cases encourages the transfer of knowledge.
Take-home messages: The use of clinical cases is recommended to implement the transfer of knowledge to medicine students.
We suggest looking for innovative strategies which encourage the transfer of knowledge.

4AA/16
Ed's Story: theatre as a teaching tool for medical students with respect to paediatric oncology and end-of-life care

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Background: Ed's Story: the Dragon Chronicles is a verbatim play created using the journal of a 16 year-old with advanced cancer, and follow-up interviews with his family and healthcare team.
Summary of work: The aim of this retrospective, cross-sectional study was to collect responses of medical students and residents who viewed a performance. 46 trainees (60.9% female, 39.1% male, age 26.2±3.2) from 5 Canadian medical schools completed a confidential, online survey within 1 year of first viewing.
Summary of results: A strong majority agreed that the play was a good learning experience (84.8%), taught them lessons they will use in their careers (71.1%), and should be experienced by all medical students (75.5%). The play generated new insight into patients' experiences and inter-professional care, and was preferred to other modalities. Response to potential insertion into curriculum was mixed. A post-survey focus group cited possible reasons for this discrepancy, and suggested an ideal context.
Conclusions: Ed's Story: the Dragon Chronicles generated profound, positive responses from medical trainees.
Take-home messages: In the correct context, this play could be inserted into medical school curriculum at the

undergraduate level. These responses will be compared to those of medical students who view the play as a mandatory component when integrated into curriculum in May 2012.

4AA/17
The effect of increased student numbers on clinical skills exposure: a longitudinal study

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Background: Mackay rural clinical school opened in 2004 with students relocating rurally to complete their final 2 clinical years of the James Cook University medical course. Student numbers are rapidly expanding.
Summary of work: A comprehensive evaluation of the course has been completed annually since 2006 including an assessment of exposure to clinical and practical skills. We analysed these data in order to assess the impact of increased numbers on exposure to clinical skills.
Summary of results: Student numbers have increased from 6 in our first intake, to 30 in our most recent cohort. The increased numbers do not appear to have impacted on exposure to or perceived proficiency relating to key clinical and practical skills.
Conclusions: Providing adequate clinical skills exposure for increasing numbers of students is a challenge in our setting. Currently, clinical skills exposure does not seem to have been impacted by increased student numbers, however the evaluation will continue, as our intake expands by further 100% over the next two years.
Take-home messages: Student exposure to key clinical and practical skills has not changed despite increasing student numbers.

4CC e-Posters: Simulation and Simulated Patients

4CC/1
The Quality of Medical Care in India: Evidence from a Standardized Patient Study in Two States

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Background: Scant evidence exists - especially from low-income countries - on the quality of primary healthcare. This study provides valuable data through the 'eyewitness' of unannounced standardized patients (SPs).

Summary of work: SPs were recruited locally. The final cohort of 22 was rigorously coached in portrayal and recall tested. Three cases were portrayed: myocardial infarction in a middle-aged male, asthma in a young person, and proxy dysentery, where a parent presents the symptoms of an absent 2-year old. SPs were deployed in clinics in urban and rural India. Data was generated from 916 interactions.

Summary of results: Adherence to clinical guidelines was low (diagnosis rates ranged from 8.8% for unstable angina to 22.5% for asthma). Private providers, including those without medical qualifications, exhibited higher quality than public providers. There was little association between measured quality and equipment or patient loads.

Conclusions: These findings provide important evidence showing provider effort is key to quality and suggest that current health policies aiming to increase investment in infrastructure and expand public-sector provision may do very little to improve the care that patients actually receive.

Take-home messages: This study is the largest SP-based assessment of clinical practice in any country, and the first study worldwide that includes unqualified providers in the sample. The findings challenge widely held beliefs in the health policy literature that the health of the poor can be improved by expanding the public sector.

4CC/2
Discrepancy between faculty and simulated patient (SP) scores for communication and interpersonal skills

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Background: In our previous OSCE study, total scores for communication and interpersonal skills (CI) rated by faculty and SP were weakly correlated, but the different perspectives of both raters were not clearly identified.

Summary of work: Fifteen SP cases in OSCE encountered by sixth-year medical students at Kagoshima University in 2010 and 2011 were analyzed. Five items of listening (L), five of explaining and decision-making (ED), and 4 of attitude and the whole process (AW) were scored by a faculty rater and an SP for each examinee using equivalent instruments. Scores were analyzed using Pearson correlation and the paired t-test.

Summary of results: Among the 15 cases, mean numbers of cases indicating significant correlations without significant paired t-tests were 0.6, 2.0, and 1.0, significant correlations with significant paired t-tests numbered 0.6, 1.6, and 1.3, and

significant paired t-test without significant correlations numbered 8.2, 3.8, and 7.5 for L, ED, and AW, respectively. Significant score differences were detected for items of listening behaviors, expressing empathy, and attitude such as enthusiasm and confidence.

Conclusions: CI scores rated by faculty and SP show discrepancy, and were rarely identical or showed positive correlations at item levels.

Take-home messages: Faculty and SP raters have different perspectives on CI, and do not complement each other.

4CC/3
Simulated Emergency Telephone Consultations - a newly implemented training course for medical students

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Background: Though patient contacts are increasingly made by telephone it is still uncommon to teach telephone consultations in undergraduate medical education. Therefore the Faculty of Medicine of Bern has developed an optional training course for fifth-year medical students.

Summary of work: The learning objectives were accurate history taking, evaluating the patients' answers, and providing advice. The course contained a manual, an introductory lecture, and a training course with simulated patients.

Summary of results: The course was awarded a mean 5.5 marks (out of a maximum of six marks). The consultations were ranked as "very informative" by 68% and "informative" by 32%. Personal learning gain was recorded by 94%.

Conclusions: Due to the high evaluation marks and the high percentage of personal learning gains the Faculty of Medicine of Bern decided to make the course 'Simulated Emergency Telephone Consultations' obligatory for all medical students in their fifth year.

Take-home messages: Our evaluation suggests the implementation of a practical training course in emergency telephone consultation during medical education.

4CC/4
Comparison of Psychometrics when using Teaching Assistants versus Standardized Patients in an OSCE Examination

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Background: Using standardized patients (SP) is an excellent approach for performance evaluation in medical education. Effective SP programs require significant financial investment, which may prove difficult for many medical schools to provide.

Summary of work: We hypothesized the use of teaching assistants (TA) who are medical school graduates as standardized patients, influences the psychometrics of the examination. We believe their medical knowledge influences their answers to random student questions which may impact students' decision process, thus making results unacceptable from the psychometric standpoint. Two groups of graders were used: the SP control group of 135 students and the TA study group of 137 students.

Summary of results: A one tail T- test showed statistically significant differences. The SP and TA Groups scored students to an average of 10.6 and 11.4 points respectively, which represents a statistically significant difference.

Conclusions: Use of medically trained faculty as SPs impacts the scoring of standardized patient encounters. Other factors that potentially impacted results are TAs' prior knowledge of students' abilities and differences in leniency among graders.

Take-home messages: Although this approach is more cost effective, the psychometric impact and grade accuracy should be considered. Future studies should be conducted to further analyze the benefit/risk ratio of using medical professionals as standardized patients.

4CC/5
'Simulated Ward Rounds' - Involving patients as teachers using the 'Patients as Educators' (PAE) Programme

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Background: The 'Simulated Ward Rounds 'provide students the opportunity to engage with patients who are recruited from the Patients as Educators group (PaE). 'Simulated Ward Rounds' were first introduced for fourth year medical students in 2007 to provide an adjunct to clinical experiences gained in primary care and hospital settings. In 2008, the concept was extended to Final Year students prior to their clinical competency assessments (OSCE) and introduced for the third year medical students. All simulated ward rounds are conducted in the clinical skills centre at the Northern General Hospital, Sheffield.

Summary of work: Students obtain clinical histories from patients, carry out physical examinations and undertake clinical skills. Furthermore students learn communication skills and professional attitudes. The Academic Foundations doctors help facilitate the ward rounds and provide constructive feedback to the students.

Summary of results: The students' and patients' evaluation of simulated ward rounds has demonstrated the efficacy of the learning experience. The program has been well received both by medical students and the Patient as Educators group.

Conclusions: Patients offer personal experiences and provide powerful feedback to the participating students thus helping students develop confidence for future patient interactions. The foundation doctors obtain experience of facilitating a learning experience and providing feedback.

Take-home messages: Students have the opportunity to see real patients in a controlled and safe setting, helping them to gain valuable insight into a variety of patient conditions and learning valuable clinical skills.

4CC/6
A needs analysis for a Standardised Patient programme at an African medical school

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Background: The use of Standardised Patients (SPs) for medical education in developed settings is well documented. The aim of this study was to conduct a needs analysis for the development of a SP programme at an African university and to recommend a suitable model. The study was located in a Primary Health Care-led (PHC) curriculum, which foregrounds patient-centred principles such as equity in decision-making and human rights.

Summary of work: In a mixed methods study, data was collected from semi-structured interviews with patients, focus groups with fourth year medical students, questionnaires for third year medical students and quantitative tracking of patient-student encounters.

Summary of results: Most students prefer examining real patients and have difficulty seeing an SP as a 'tutor'. Although patients were positive about being examined by students, and generally were keen to participate in students' learning, quantitative data shows that patients often became tired and refused seeing students. Qualitative data suggests that while students reported frustration at finding enough relevant cases, they seemed oblivious to patients' rights in this context.

Conclusions: These findings are similar to those in developed settings; however, it highlights areas of tension that are specifically relevant in a patient-centred curriculum.

Take-home messages: Developing a model for a SP programme requires alignment with curricular values.

4CC/7
The name of the game is "Let's Not Play House": An innovative interprofessional education simulation

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Background: The University of Toronto (UT) developed and implemented a requisite competency-based interprofessional education (IPE) curriculum across 11 health science programs in 2009. This comprehensive curriculum includes five components: core competencies, core and elective learning activities, assessment, evaluation and faculty leadership.
Summary of work: One learning activity developed in the curriculum is a case-based simulation utilizing standardized patients and family members around a complex intriguing case. Students in small groups of 10 with a facilitator receive the stem of the case and work as an interprofessional team to ask for reports and test results from a health chart. They also have the opportunity to interview the patient and some of his friends and family in order to obtain a clear assessment picture and consider management.
Summary of results: Students reported improved perception of learning of the IPE core competencies on pre- and post-self-assessments utilizing global rating scales linked to the UT IPE core competencies. In addition, evaluation results revealed positive feedback regarding the learning opportunity.
Conclusions: Interprofessional education benefits from simulated learning activities that use innovative methods that make learning fun. The role of simulation in IPE requires continued development and application to determine best practices.
Take-home messages: Innovative IPE learning involving simulation is effective, valuable and fun.

4CC/8
Electronic Health Information System Simulator as a tool in education of Public Health, Nursing and Rehabilitation students at Lithuanian University of Health Sciences

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Background: Before entering health professions, students must have practical skills including management of e-health data.

Summary of work: Practical learning simulator of electronic information system, isolated from any influence on real patient data, was developed with 19 functional modules, such as patient record management, laboratory investigations, management of preventive programs etc. Advanced user rights management allows selecting and assigning relevant functional parts for studies in specific programs, and creating data structures needed for academic assignments. Different scenarios of clinical situations can be created and managed.
Summary of results: The project focused on three study programs:
1 Nursing students benefit from in-patients management processes, including use of international nursing classificators (NIC, NOC, NANDA).
2 Public Health students understand the sources and flows of health information and are able to design preventive programs, develop and analyze institution management schemes and statistical reports.
3 Rehabilitation students use International Classification of Functioning, Disability and Health, other scales aimed at assessment of patient status, development of rehabilitation programs and analysis of outcomes.
Conclusions: The Simulator principles (expandability, patient safety, reality elements) will improve practical training and develop profession-oriented creativity.
Take-home messages: Simulator of electronic information system is a useful tool in development of professional skills among nursing, public health, and rehabilitation students.

4CC/9
Simulation-based education in the rehabilitation professions: A scoping review

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Background: Simulation-based education (SBE) has shaped curriculum, policy and research in medicine and nursing, but little is known about SBE in the rehabilitation professions. A comprehensive review is needed to inform what questions still remain unaddressed and how the rehabilitation professions can benefit from SBE.
Summary of work: This scoping review aimed to 1) determine the extent, range and nature of SBE in rehabilitation, and 2) to identify research gaps. Relevant databases, conference proceedings and grey literature were searched. Two authors reviewed the list of abstracts retrieved against pre-set inclusion criteria. Included articles were retrieved for full review, data extraction and analysis using Alkin's Evaluation Theory Tree of program evaluation.
Summary of results: Qualitative content analysis of included articles revealed that three types of simulations are commonly cited in the literature in the context of a range of educational purposes. Notably, effectiveness studies comprised the majority of the included articles. In addition to

the commonly cited benefits, SBE may have critical roles in enhancing educational processes that relate to broader curricular goals. A program evaluation framework was useful for identifying future research questions.
Conclusions: SBE is widely used in some rehabilitation professions. Future studies must examine how SBE impacts on educational processes and clarify its role in assessing specific learning outcomes.
Take-home messages: Opportunities exist to further explore how SBE in the rehabilitation professions can enhance educational processes in addition to specific learning outcomes.

4CC/10

Identifying non-technical skills for medical students and development of a simulation-based teaching programme

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Background: Non-technical skills (NTS) are implicated in patient safety and their integration into the undergraduate medical curriculum has been recommended. NTS teaching is currently limited in the UK medical undergraduate curriculum.
Summary of work: This project aimed to identify NTS required by medical students and develop a simulation-based teaching programme. Previous taxonomies (anaesthetists NTS and NTS for surgeons) were reviewed followed by a period observing junior doctors, identifying commonly used NTS. A medical students' taxonomy (MS-NTS) was created and a simulation-based teaching programme developed. The final MS-NTS taxonomy contains the categories: situation awareness, decision making, communication, team working, leadership/task management and managing stress and fatigue.
Summary of results: During the observation period most skills were observed except for 'managing stress and fatigue', a difficult skill to detect but important to patient safety and 'solving conflicts', as no conflicts arose between team members.
Conclusions: Research shows that simulated scenarios followed by feedback is the most effective NTS teaching method. The developed simulation-based teaching programme used three stages: awareness, practice, feedback and reinforcement.
Take-home messages: It is hoped that this teaching programme will be incorporated into the Cardiff University curriculum. Following incorporation, further research is needed to evaluate effectiveness, but it is hoped it will reduce the error rate among junior doctors.

4CC/11

'Herding' MEERKATS: A description of the development and evaluation of a simulation-based multi-professional induction course using Programme Theory analysis

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Greg Mcanulty (*St George's Hospital NHS Trust, Simulation, London, United Kingdom*)
Deborah Dawson (*St George's Hospital NHS Trust, Simulation, London, United Kingdom*)
Philip Newman (*St George's Hospital NHS Trust, Simulation, London, United Kingdom*)
Huon Snelgrove (*St George's Hospital NHS Trust, Simulation, London, United Kingdom*)
Yuriy Kuybida (*St George's Hospital NHS Trust, Simulation, London, United Kingdom*)

(*Presenter:* Hasmita Bagia, St George's Hospital NHS Trust, Simulation, Blackshaw Road, London SW17OQT, United Kingdom, hasmitabagia@hotmail.com)

Background: We developed MEERKATS, a simulation-based training programme for doctors and nurses. We used 'Programme Theory' and 'Contribution Analysis' and applied it to this context to construct and implement a 'theory of change' (Funnell & Rogers 2011).
Summary of work: Research Question: To what extent are observed results due to programme activities rather than other factors?
Step 1: Focus on areas of acute care to be targeted; Step 2: Develop a theory of change and risks to it; Step 3: Gather existing evidence on theory of change; Step 4 Assess contributions of other interventions; Step 5: Assemble evidence of change within the complex acute care environment; Step 6: Revise goals, course structure and evaluation points
Summary of results: Programme Analysis stimulated us to: 1. Clarify goals. 2. Define responsibilities and interactions with other actors and interventions. 3. Change teaching and learning activities within new theory of change. 4. Implement new programme activities. 5. Identify factors influencing success or failure.
Conclusions: Programme Analysis can define success criteria within multiple and complex interdependencies and where traditional causality questions may be impossible to answer.
Take-home messages: Achieving our original aim was more difficult than we thought. Locating our course within an array of other interventions promoted better design as well as more realistic evaluation.

4CC/12

Do Simulation and Virtual Reality Models as Part of the Medical Core Program Improve the Undergraduate and Postgraduate Medicine Students' Learning Process?

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Oralia Barboza-Quintana (*Universidad Autonoma De Nuevo Leon, Pathology And Cytology, Monterrey, Mexico*)
Raquel Garza-Guajardo (*Universidad Autonoma De Nuevo Leon, Pathology And Cytology, Monterrey, Mexico*)

Mario Alberto Hernandez-Ordonez *(Universidad Autonoma De Nuevo Leon, Forensic Medicine, Monterrey, Mexico)*
Angel Martinez-Ponce De Leon *(Universidad Autonoma De Nuevo Leon, Neurosurgery, Monterrey, Mexico)*
Norberto Lopez-Serna *(Universidad Autonoma De Nuevo Leon, Embryology, Monterrey, Mexico)*

(Presenter: Gerardo Enrique Munoz.Maldonado, Universidad Autonoma De Nuevo Leon, General Surgery, Emilia Pardo Bazan 131, Colinas De San Jeronimo, Monterrey 64630, Mexico, cevam99@gmail.com)

Background: Current training of undergraduate and postgraduate medical students is facing new challenges: increase in costs secondary to complications and increase of malpractice suits. These reasons have pushed institutions to seek new alternatives such as simulation and virtual clinical scenarios.
Summary of work: The School of Medicine of the UANL has designed the "Center for Medical-Surgical Evaluation and Training" (CEVAM in Spanish), providing a space that allows an objective education and testing of knowledge in procedures, and medical-surgical competencies in a standardized way. All the virtual mannequins and simulation equipment are in the same location allowing students to develop practice skills in a centralized, efficient, and affordable way.
Summary of results: Since 2005, CEVAM has been the scenario for courses, medical-surgical training simulations, and competence accomplishments for students during their studies in surgery, emergency, gastroenterology, and anesthesiology among others fields included on their medical core programs. CEVAM has also been the venue for international training programs like the American College of Surgeons´ ATLS and the American Heart Association´s BLS, ACLS and PALS certifying 3,500 healthcare providers.
Conclusions: Throughout our experience, including simulation models in the medical core program of students have shown advantages in their learning process such as higher knowledge retaining, patient safety, teamwork, and better competence skills.

4CC/13
A pilot study to explore the effect of high fidelity simulation experience as undergraduates on confidence levels in Obstetrics and Gynaecology

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Naomi Fenton *(Imperial College School of Medicine, O&G, London, United Kingdom)*
Bina Vekaria *(Imperial College School of Medicine, O&G, London, United Kingdom)*
Callum Ettles *(Imperial College School of Medicine, O&G, London, United Kingdom)*
Edward Poynton *(Imperial College School of Medicine, O&G, London, United Kingdom)*
Naila Siddiqui *(Imperial College School of Medicine, O&G, London, United Kingdom)*

(Presenter: Catriona Reid, Imperial College School of Medicine, O&G, Exhibition Road, South Kensington, London SW7 2AZ, United Kingdom, catriona.reid10@imperial.ac.uk)

Background: High fidelity simulation (HFS) training has been used for a number of years in medical schools to provide a more realistic environment than other traditional forms of teaching. However, HFS is not established practice in undergraduate O&G teaching.
Summary of work: The confidence levels of eleven students were measured using a five-point Likert scale questionnaire before and after a HFS training session of an acute ectopic pregnancy. Confidence in situation awareness, history taking, decision making and knowing ones limits was measured.
Summary of results: T-tests were carried out on the mean scores of the Likert-scale before and after HFS to note any significant change. Confidence in: (p-value) 1. recognising a gynaecological emergency-0.29; 2. history taking-0.18; 3. recognising patients in immediate danger-0.0011; 4. management-0.002; 5. calling for senior help-0.28
Conclusions: The confidence of students significantly improved in management and recognising patients in immediate danger. These areas may have improved most with HFS because students have less exposure to them during their rotation. A larger study is required to explore this further.
Take-home messages: As decision making and recognising patients in immediate danger are necessary skills for doctors, we propose embedding HFS into the undergraduate O&G curriculum to improve confidence in these areas.

4CC/14
Does interprofessional simulation training deliver beneficial outcomes for early clinical practice?

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T Valler-Jones *(Worcester University, Institute of Health and Society, Worcester, United Kingdom)*
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(Presenter: Janina Iwaszko, University of Birmingham Clinical Teaching Academy, Worcester Acute NHS Trust, Alexandra Hospital, Woodrow Drive, Redditch B98 7UB, United Kingdom, janina.iwaszko@worcsacute.nhs.uk)

Background: A structured qualitative study to determine how simulation affects acute clinical management and interprofessional skills in junior doctors and nursing students. Simulation enhances both medical and teamwork skills and interprofessional training improves communication and clinical skills. Combining these techniques generates improvement in all these areas, with the potential to improve patient safety. Interprofessional simulation learning occurs in a safe, supportive and educationally structured environment, achieving valuable, innovative and cost effective training.
Summary of work: Fifty-seven Foundation Year 1 doctors and seventy-five second and third year nursing students undertook interprofessional simulation training. Verbal feedback and structured debriefing followed each scenario. Written feedback was analysed using qualitative, thematic techniques that were independently verified. A follow-up questionnaire was conducted ten months later.

Summary of results: Effects were noted in recognising personal capabilities and limitations, cognitive and learning techniques, communication, understanding different professional cultures and the importance of acute clinical guidelines. Most of these were still present at the follow-up.

Conclusions: Simulation in an interprofessional setting can enhance acute clinical management and human factor skills, with a lasting effect on practice after ten months.

Take-home messages: Interprofessional simulation training has lasting beneficial effects on practice for both FY1 doctors and nursing students.

4CC/15
Leadership strategies to develop an undergraduate Clinical Simulation Center

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Patricia Muñoz (*Universidad Diego Portales, Facultad de Medicina, Santiago, Chile*)
Jorge Las Heras (*Universidad Diego Portales, Facultad de Medicine, Santiago, Chile*)

(*Presenter:* Patricia Muñoz, Universidad Diego Portales, Facultad de Medicina, Ejercito 233, Santiago 12345, Chile, patricia.munoz@udp.cl)

Background: At Diego Portales University Medicine Faculty simulation based medical and nursing education was inserted in the curriculum using low fidelity models and task training programs since 2002. High fidelity simulation has been used in medicine and nurse students since 2008, increasing progressively the presence in courses as a teaching and evaluation tool. In 2010, under the guidance of the dean, the development project of a Clinical Simulation Center for undergraduate students was implemented.

Summary of work: After an extensive literature search for models of successful curriculum management, project leaders decided to use leadership strategies of curriculum reform process at UCLA Medicine School to achieve the realization of the project in functional time for institutional standards.

Summary of results: We designed a four step plan based on the 27 leadership lessons derived from their five-phase curriculum change process and Kotter's Eight Leadership Steps1. One year later, we started the curricular insertion in Medicine and Nursing schools, with broad acceptance and good results.

Conclusions: To develop a project creating, implementing and anchoring new approaches in the culture of any institution requires extensive leadership.

Take-home messages: The use of known models of simulation and academic development, but specially the use of leadership strategies for change have been useful to achieve multiple goals in a short time.

4CC/16
FERTHIK – planning a veterinary skills lab

Andrea Tipold (*University of Veterinary Medicine Hannover, Foundation, Vide-President for Teaching, Hannover, Germany*)
Suzanne Müller-Berger (*University of Veterinary Medicine Hannover, Foundation, President's Office, Hannover, Germany*)
Gerhard Greif (*University of Veterinary Medicine Hannover, Foundation, President, Hannover, Germany*)

Jan P. Ehlers (*University of Veterinary Medicine Hannover, Foundation, E-Learning Department, Hannover, Germany*)

(*Presenter:* Andrea Tipold, University of Veterinary Medicine Hannover, Foundation, Vice-President for Teaching, Clinics for Small Animals, Buenteweg 9, Hannover D-30559, Germany, andrea.tipold@tiho-hannover.de)

Background: Veterinary curricula in Germany focus on imparting of knowledge, competence-based education is mainly performed in the practical year. Skills and attitudes are important parts of the education and should be implemented.

Summary of work: With funding of the Federal Ministry of Education and Research jointly with the federal states a skills lab combined with a professorship for veterinary ethics will be established at the TiHo Hannover to foster education of skills and attitude. The project period will last five years, afterwards the TiHo will run the skills lab on an ongoing basis.

Summary of results: 25 stations about the most important veterinary skills (e.g. surgery, injections, rectal examination, critical care) will be developed and equipped with instrumentation and simulators. To each station also ethical questions about veterinary action are formulated. The objectives for skills and attitudes will be made explicit. The skills lab will be used for tutorials, self-learning, OSCEs and seminars for returnees.

Conclusions: In veterinary studies conflict between academic literacy and practical preparation for profession exist. A well-balanced competence-based education including knowledge, skills and attitudes is important and will be supported with the described skills lab.

Take-home messages: Teaching and learning of skills and attitudes can be combined in a gainful manner.

TUESDAY 28 AUGUST 2012

SESSION 5: Plenary
Tuesday 28 August: 0815-1000

5A Plenary: Science in Medical Education: More than transmitting facts!

Aviad Haramati (*Georgetown University School of Medicine, Washington DC, USA*)

With the discovery of new scientific information increasing exponentially each year, medical science educators are faced with the challenge of determining how best to educate students in the health professionals in science and how the learning can progress throughout the continuum of medical education. In this plenary presentation, Dr Haramati will share his perspectives on what the competencies and outcomes regarding science should be and how to improve the learning of science by creating an appropriate climate that encourages inquiry and curiosity. He will also advocate a new role for faculty who teach science, which is to participate in the professional development of students through educational interventions that improve professional behaviors.

5B Plenary: The Requirements of Medical Education in Postgraduate Training

Carsten Mohrhardt (*Department of Orthopaedic and Trauma Surgery Clinic Center Karlsruhe, Germany and President of the European Junior Doctors*)

Medical Education changes within the life of a Doctor several times. Likewise the Doctor itself is undergoing several transitions, so does the art of education. It must be adapted to the needs of the training period. In postgraduate training, medical education changes from acquiring theoretical knowledge to its daily application and regular updating. The requirements resulting from the process will be shown in this presentation.

5C Plenary: The continuum of education and the practicing doctor

N G Patil (*The University of Hong Kong*)

With advent of user-friendly technology patients have access to vast amount of information which could be quite challenging to practicing doctors at the consultation. Patients tend to believe that doctors are up to date and objective with the recent advances in treatment modalities. Practicing doctors have various avenues available for the continuum of education with recognized CME (Continuing Medical Education) activities and self education through online journals and libraries. Registration bodies for medical practitioners in various countries have made it mandatory to acquire baseline CME points as an essential part of CPD (Continuing Professional Development) and revalidation/registration for practicing rights. There is a perception, however, that these requirements may not

necessarily achieve the intended goals of CME with the influence of other factors.

The presentation will highlight the remedies and strategies for the continuum of education for practicing doctors in both developed and developing countries.

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SESSION 6: Simultaneous Sessions
Tuesday 28 August: 1030-1215

6A Symposium: Lifelong Learning – from the classroom to the point of care

Ron Murray (*University of Virginia School of Medicine, USA*)
Eugene Pozniak (*Siyemi Learning, UK*)
Edwin Borman (*UEMS-CME/CPD Working Group, UK*)
Ina Weisshardt (*White Cube Consultants, Munich, Germany*)
Julie Simper (*Kenes Education, Amsterdam, Netherlands*)

CME/CPD currently being developed in various European Union countries and North America is underpinned by lifelong learning opportunities from the classroom to the point of care. The contemporary vision for CPD also emphasizes inter-professional, team-based learning and practice throughout the continuum of medical education. This mini-symposium will provide a summary of perspectives on lifelong learning with specific examples of knowledge management from representatives of a medical school, medical education companies and an accreditation body.

6B Symposium: Teaching clinical reasoning early in the medical curriculum

Anthony R Artino, Jr (*Uniformed Services University of the Health Sciences, Bethesda, USA*)
Steven J Durning (*Uniformed Services University of the Health Sciences, Bethesda, USA*)
Bernard Charlin (*Université de Montréal, Canada*)
Mathieu R Nendaz (*University of Geneva Faculty of Medicine, Switzerland*)
Olle ten Cate (*University Medical Center, Utrecht, The Netherlands*)
Eugène Custers (*University Medical Center, Utrecht, The Netherlands*)

Much of the research on clinical reasoning is directed towards unravelling the clinical reasoning processes of experts and, more recently, advanced learners. Knowledge of these processes in clinicians may, however, be of limited help when designing clinical reasoning training in early phases of medical education. Expert clinical reasoning requires a substantial knowledge base, whereas students' knowledge consists of poorly integrated pathophysiological and theoretical clinical knowledge and sketchy mental representations of clinical cases. This symposium aims at bringing clinical teachers, psychologists, educationalists, and curriculum developers together to discuss these challenges

6C Short Communications: Selection for Undergraduate Studies

6C/1
Selection in medical school admissions: effectiveness and predictive value

T.A. Timmermans (*The Academic Medical Centre (AMC), University of Amsterdam, Centre of Excellence in Evidence-Based Education, Amsterdam, Netherlands*)
G.W.G. Spaai (*The Academic Medical Centre (AMC), University of Amsterdam, Centre of Excellence in Evidence-Based Education, Amsterdam, Netherlands*)
Y. Bulten (*Academic Medical Centre (AMC), University of Amsterdam, Centre of Excellence in Evidence Based Education, Amsterdam, Netherlands*)
R.J. Oostra (*Academic Medical Centre (AMC), University of Amsterdam, Anatomy, Embryology and Physiology, Amsterdam, Netherlands*)
J. Admiraal (*Academic Medical Centre (AMC), University of Amsterdam, Master Student, Amsterdam, Netherlands*)
R.L. Hulsman (*Academic Medical Centre (AMC), University of Amsterdam, Medical Psychology, Amsterdam, Netherlands*)
A.H. Zwinderman (*Academic Medical Centre (AMC), University of Amsterdam, Clinical Epidemiology, Biostatistics & Bioinformatics, Amsterdam, Netherlands*)

(*Presenter:* T.A. Timmermans, The Academic Medical Centre (AMC), University of Amsterdam, Centre of Excellence in Evidence-Based Education, Meibergdreef 15, room J0-223-1, Amsterdam 1105 AZ, Netherlands, t.a.timmermans@amc.uva.nl)

Background: Selection for Dutch medical schools takes place by means of a weighted lottery procedure. From 1999, schools are allowed to select part of the students themselves and students with excellent grade point averages obtain direct access.
The Academic Medical Centre (AMC), University of Amsterdam introduced a selection procedure focusing on cognitive and non-cognitive abilities.
Summary of work: Lottery-admitted students, selected students and direct access students were compared as to motivation, extra-curricular activities and academic performance. Study outcomes of four cohorts (2006-2009; n=1399) were collected and a survey was conducted to measure motivation and extra-curricular activities (response rate: 54.4%). Predictive values of the selection instruments were determined.
Summary of results: Academic performance of direct access students surpassed that of selected students who in turn surpassed lottery-admitted students. Selected students showed higher motivation and more extracurricular, health care related activities than both other groups.Correlations between selection instruments and the (non)-cognitive output parameters were moderate (r= ±0.45) to low (r ≤ 0.10).

Conclusions: We succeeded selecting students who have a strong commitment to health care and who are highly motivated. Given the limited predictive value of the selection instruments, the selection procedure must be reconsidered.
Take-home messages: Continuous evaluation is necessary for the implementation and further development of the selection procedure.

6C/2
MMI and examiner-noted worries: how does it correlate with competencies evaluation during pre-clerkship and clerkship? A three year study

Christian Bourdy (*Université de Montréal, Faculté de médecine, Montréal, Canada*)
Robert Gagnon (*Université de Montréal, Faculté de médecine CPASS, Montréal, Canada*)

(*Presenter:* Christian Bourdy, Université de Montréal, Faculté de médecine, C.P. 6128, Succursale Centre-ville, Montréal H3C 3J7, Canada, christian.bourdy@umontreal.ca)

Background: MMI are used since 2006 as a selection tool for applicants in many medical schools. This method offers a better objective evaluation than the traditional long interviews. As many interviewers give their global appreciation of a candidate, the MMI can gather non cognitive information on each candidate.
Summary of work: At Université de Montréal School of Medicine, we implemented MMI in 2008. Along with the non cognitive dimensions (communication, interpersonal relationship, etc.), we ask the 12 interviewers to signal any worry they have or feel about each candidate.
Summary of results: We revise all applicants' evaluations describing interviewers' worries such as rigidity, lack of authenticity, misjudgement and immaturity. We decide to reject a candidate if more than a third of examiners detect such worries. For those we accepted with less worries, it seems they can perform without any major competencies deficit even during clerkship rotations.
Conclusions: Interviewers' worries are a new tool to put away candidates demonstrating character traits that often cause problems in the patient-doctor encounters.
Take-home messages: Rigidity, immaturity and lack of authenticity are better detected before School of medicine admission and the interviewers' worries seem to be an interesting new tool.

6C/3
Predictive validity of the Dundee MMIs

Adrian Husbands (*University of Dundee, Division of Clinical & Population Sciences & Education, Dundee, United Kingdom*)
Jonathan Dowell (*University of Dundee, Division of Clinical & Population Sciences & Education, Dundee, United Kingdom*)

(*Presenter:* Adrian Husbands, University of Dundee, Division of Clinical & Population Sciences & Education, The Mackenzie Building, Kirsty Semple Way, Dundee DD2 4BF, United Kingdom, ahusbands@dundee.ac.uk)

Background: The Multiple Mini Interview (MMI) is one of the pre-admissions measures used to assess non-cognitive skills

at Dundee medical school. While mainly North American studies have reported predictive validity there have been none so far in the UK with a younger student population. This research adds to the body of evidence on the utility of MMIs as a selection tool.

Summary of work: This research aims to evaluate the ability of MMIs to predict medical school exam scores in comparison to other pre-admissions measures, namely the UKCAT and personal statement. Pre-admissions data were matched with exam scores for 290 first and second year students who sat MMIs in 2009 and 2010. Correlations were used to select variables for multiple regression analysis.

Summary of results: Exam scores correlated positively with MMI and UKCAT scores. Significant correlations ranged from .18 to .35 and .18 to .49 after correction for range restriction. There were no significant positive relationships between exam and personal statement scores. Multiple regression analysis revealed the MMI to be the most consistent predictor of examination scores across cohorts and years.

Conclusions: Predictive validity data provides further evidence that MMIs are useful for selection.

Take-home messages: MMIs predict medical school performance.

6C/4
Implementing the test for medical studies (TMS) in a compensatory admission procedure ensures homogeneous prediction of study performance and low attrition

Guni Kadmon (*Heidelberg University School of Medicine, General, Visceral, and Transplantation Surgery, Heidelberg, Germany*)
Martina Kadmon (*Heidelberg University School of Medicine, General, Visceral, and Transplantation Surgery, Heidelberg, Germany*)

(*Presenter:* Martina Kadmon, Heidelberg University School of Medicine, General, Visceral, and Transplantation Surgery, Im Neuenheimer Feld 110, Heidelberg D-69120, Germany, martina.kadmon@med.uni-heidelberg.de)

Background: Student admission by the Heidelberg School of Medicine is designed to admit students with diverse school leaving grades but a uniformly high potential for success. To this end, the baccalaureate grade (bGrade) and the TMS score, which reflect different cognitive abilities, are used as compensatory admission instruments.

Summary of work: The performance of the students in faculty examinations, their adherence to the course, and attrition where examined in relation to their bGrades and TMS scores.

Summary of results: The prognostic validity of both predictors proved to be similar. As of 2009, high TMS scores were necessary in order to rank high enough to qualify for admission, whereby applicants with worse bGrades needed better TMS scores. Due to this, the predictive values of bGrade and TMS equalled out, yielding uniform prediction for academic performance for all admissions. Attrition among the students admitted as of 2009 was 75% lower than in previous cohorts, their academic performance was, on average, significantly better, and students with mediocre bGrades performed as well as the students with best bGrades.

Conclusions: Using bGrades and the TMS as independent compensatory admission instruments, the competition for study places was opened to previously excluded applicants, while resulting in diversity of abilities, high performance and very low attrition.

6C/5
Identification of core professional attributes for selection of candidates for admission to physical therapy and occupational therapy

Liliane Asseraf-Pasin (*McGill University, School of Physical and Occupational Therapy, Montreal, Canada*)
Aliki Thomas (*McGill University, School of Physical and Occupational Therapy and Center for Medical Education, Montreal, Canada*)

(*Presenter:* Aliki Thomas, McGill University, School of Physical and Occupational Therapy, 3654 Promenade Sir William Osler, Montreal H3G 1Y5, Canada)

Background: Decisions regarding the most desirable professional attributes for admission to Occupational Therapy (OT) and Physical Therapy (PT) programs must be made using rigorous and explicit processes.

Summary of work: The PT and OT programs at one Canadian university identified core professional attributes to be used to scaffold admissions processes using different consensus methods: OT attributes were generated through stakeholder surveys and focus groups. Synthesis of responses through thematic analysis revealed 14 attributes which were used to create interview stations. PT attributes were generated based on 7 key roles of the Profile of Physiotherapy Practice in Canada. A modified Delphi used to rank order these attributes revealed 5 attributes for each of the PT roles.

Summary of results: Independent of the process used, both programs' desired attributes were aligned with appropriate core National professional competencies. Several attributes overlapped across OT and PT.

Conclusions: PT and OT programs share common desired attributes that align with those of national guidelines, established by local consensus exercises. Admissions processes should be scaffolded using locally and nationally relevant professional attributes determined through rigorous processes.

Take-home messages: Different approaches for identifying professional attributes for selection and admission into PT and OT resulted in similar core attributes suggesting that similar professional competencies may underlie the 2 professions.

6C/6
Strategies for Selecting Students for a Rural Physician Leadership Program

Carol L. Elam (*University of Kentucky College of Medicine, Office of Medical Education, Lexington, United States*)

(*Presenter:* Carol L. Elam, University of Kentucky College of Medicine, Office of Medical Education, 138 Leader Avenue, Lexington 40506, United States, clelam1@email.uky.edu)

Background: The University of Kentucky College of Medicine launched the Rural Physician Leadership Program (RPLP) to attract medical school applicants likely to practice in rural Kentucky communities.

Summary of work: Rural faculty were engaged in a nominal group process to determine their perceptions of successful rural physicians, and students likely to thrive in a rural medicine setting. Given their input, a three-part admissions procedure was developed.

Summary of results: 1) A rural interview was designed to explore applicants' understanding of rural culture and rural people, thought into physician/patient relationships, personality qualities and interpersonal manner, career plans, desire to serve others and potential for success in the RPLP and likelihood to practice rural medicine.

2) A personal characteristics form, completed by rural interviewers, assessed whether the applicant's demographic background, cultural upbringing, family ties, career aspirations, extracurricular interests and activities, exposure to rural medicine, patient care expectations, and understanding of community health issues were consistent with rural practice.

3) RPLP applicants wrote a brief essay addressing: How does a physician in rural practice differ from a physician in urban practice?

Conclusions: Data from the three admissions components will be presented to demonstrate outcomes.

Take-home messages: Developing a separate rural admissions process has contributed to the identity and success of the RPLP program.

6C/7
Recruiting Top Medical School Applicants to Your School: Insight from a Student Opinion Survey

__Mark D. Hanson__ (*University of Toronto, Undergraduate Medicine, Faculty of Medicine, Toronto, Canada*)
Meredith E. Young (*McGill University, Department of Medicine, Montreal, Canada*)
Saleem Razack (*McGill University, Faculty of Medicine, Montreal, Canada*)
Steve Slade (*Association of Faculties of Medicine of Canada, Research and Information Services, Ottawa, Canada*)
Kelly L. Dore (*McMaster University, Department of Medicine, Hamilton, Canada*)
Jodi Herold, et al. (*University of Toronto, Faculty of Medicine, Toronto, Canada*)

(*Presenter:* Mark D. Hanson, University of Toronto, Associate Dean Admissions and Student Finances, Undergraduate Medicine, Faculty of Medicine, Faculty of Medicine, Medical Sciences Building, 1 King's College Circle, Room 2135, Toronto, Ontario M5S 1A8, Canada, mark.hanson@utoronto.ca)

Background: An aspect of medical school admissions rarely investigated is the competition to recruit top applicants. We present data regarding factors influential in applicants' decisions that maybe of recruitment value.

Summary of work: Nine cohorts of students at four Canadian medical schools completed a broad-based survey including questions regarding factors influencing school choice. Survey questions covered a wide range of factors including school's research reputation, financial matters, premedical advice and curriculum. We focused upon factors influencing students' selected medical school (rated on a 0-5 scale; where 0=N/A, 1=very negative factor, and 5=very positive factor). Data were analyzed descriptively.

Summary of results: 1,356 students participated (81.6% response rate). Participants considered parental advice to be the strongest influence (25.3% of responses) followed by advice of medical graduates (23.0%). Financial matters (25.1%) were important. For curriculum, teaching methods (43.7%) and faculty mentorship (28%) were important.

Conclusions: We identified factors that maybe of recruitment value including information regarding teaching methods and student financial aid and contact with medical graduates. Recruitment of top applicants maybe enhanced by recruitment strategies incorporating factors influential in applicants' selection of medical schools.

Take-home messages: Recruitment strategies for top applicants requires further investigation and deliberate development by admissions committees.

6D Communications courtes en français: TICE – Simulation

6D/1
Réforme pédagogique en santé à Grenoble: une pédagogie sous haute surveillance

__Pierre Gillois__ (*Faculté de Médecine, LaboratoireTIMC - UMR 5525, Themas, UJF Grenoble 1, CNRS, Département de Santé Publique, Grenoble, France*)
Daniel Pagonis (*Faculté de Médecine, LaboratoireTIMC - UMR 5525, Themas, UJF Grenoble 1, CNRS, Département de Santé Publique, Grenoble, France*)

(*présentateur:* Pierre Gillois, Faculté de Médecine, Med@TICE - Laboratoire TIMC - UMR 5525, Themas, UJF Grenoble 1, CNRS, Département de Santé Publique, Domaine de la Merci, Batiment Boucherle, BP 170 La Tronche, Grenoble Cedex 9 38042, France, pierre.gillois@ujf-grenoble.fr)

Contexte: À Grenoble, avant 2005, l'enseignement de la première année de médecine ne satisfaisait ni les étudiants, ni les enseignants soucieux de dispenser un enseignement efficace correctement ciblé.

Résumé des travaux: Dès 2006, la méthode pédagogique a été réformée avec des technologies d'information et de communication en 4 séquences consécutives contenant a) l'acquisition des connaissances sur un support multimédia, b) la formulation de questions en ligne, c) l'exposé des réponses par l'enseignant en séances interactives, enfin d) le contrôle des connaissances avec un tutorat professionnalisé. La cellule TICE participe notamment à la préparation des entraînements tutorés et délivre régulièrement aux étudiants leurs classements établis à partir des résultats par cycles.

Résumé des résultats: L'adhésion des enseignants a été totale dès 2006. Les taux de satisfaction exprimée tant sur l'organisation pédagogique que sur les outils mis à la disposition des étudiants varient de 85% à plus de 91%. La moyenne des 12 notes obtenues au cours du tutorat est corrélée avec la note au concours (r de Spearman = 0,75). Il

apparait clairement que les facteurs de réussite au concours ont été modifiés par la réforme.

Conclusions: Cette réforme pédagogique a modifié les profils et les caractéristiques des étudiants reçus au concours ainsi que la nature des facteurs de cette réussite.

6D/2
Place du e-learning interactif en formation médicale continue

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Contexte: analyser comparativement les performances du e-Learning interactif à court et moyen terme.
Résumé des travaux: étude comparative, contrôlée, randomisée ; thème : spondylarthrites ; effectif : un groupe de validation (n= 22) et 48 médecins généralistes testés répartis en 3 groupes : e-LL (n=15) a réalisé un auto enseignement par e-Learning libre, e-LG (n=15) un auto enseignement par e-Learning guidé par leurs besoins réels, Atelier (n=18) un enseignement traditionnel ; critère principal de jugement : évolution des moyennes des notes obtenues à un questionnaire sur les connaissances théoriques et décisionnelles, administré en test/retest à 15 jours puis à 6 mois ; critères secondaires de jugement : satisfaction, temps de travail individuel estimé et coût induit.
Résumé des résultats: 1) efficacité : à 15 jours l'auto-enseignement guidé est supérieur aux autres méthodes (p<0,01), quelque soit le type des connaissances explorées (p=0,0015) ; à 6 mois, la perte de savoir est moins importante pour le groupe e-LG (p=0,0047) ; 2) rendement et efficience : le e-Learning guidé apparaît comme nettement plus rentable et moins onéreux à 15 jours et 6 mois.
Conclusions: le e-Learning interactif guidé par les besoins réels, représente une méthode rentable susceptible d'optimiser le temps de travail individuel.

6D/3
La garde simulée: une étude pilote pour les résidents en première année de médecine interne au Canada

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Contexte: La garde de nuit en établissement est une source importante de stress pour les résidents. Or, la qualité et la fréquence de la rétroaction sont souvent critiquées. La simulation permet d'offrir une rétroaction opportune et efficace.
Résumé des travaux: Déterminer le contenu, développer, mettre en place et évaluer un exercice de garde simulée. Le contenu a été déterminé par un sondage Delphi en deux rondes. Trois scénarios simulés répartis sur 90 minutes se sont déroulés à l'Université de Montréal au Canada. L'évaluation s'est faite à l'aide d'un questionnaire et de groupes de discussion.
Résumé des résultats: Trente résidents en première année de médecine interne ont participé au projet. Ils ont reconnu le haut niveau de réalisme et l'impact pédagogique. L'exercice leur a permis d'améliorer leurs habiletés à travailler en équipe et a augmenté leur confiance à exécuter certaines tâches cliniques.
Conclusions: La mise en place d'un exercice de garde simulée s'est avérée être une expérience positive et une opportunité d'offrir aux résidents une rétroaction constructive. La séance de breffage et de débreffage, la formation du corps professoral et le niveau de réalisme sont des éléments important à considérer.
Messages à retenir: La simulation requiert d'importantes ressources physiques et humaines, mais permet de discuter de problématiques difficilement abordables dans un contexte clinique traditionnel.

6D/4
Pédagogie virtuelle sensible et réfléchie au service de l'apprentissage des étudiants de médecine en Haïti

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Contexte: À la suite du sévis de 2010, la Faculté des sciences de la santé de l'université Quisqueya, a demandé du support pédagogique à l'apprentissage durable chez ses étudiants de manière à l'aider à remplacer ses ressources manquantes et à transformer son curriculum pour améliorer la formation médicale de ses diplômés.
Résumé des travaux: Les universités de Sherbrooke et Calgary ont collaboré avec Quisqueya pour accompagner les enseignants haïtiens et former les étudiants, par le partage d'une vision pédagogique commune, pour créer des

ressources adaptées et pour partager les ressources déjà utiles.

Résumé des résultats: Une combinaison de ressources didactiques locales (présentielles) et à distance en neurologie clinique a été structurée et mise à disposition en avril 2012 visant à développer des compétences neurologiques de base chez les étudiants haïtiens pour qu'ils soient mieux en mesure de répondre aux besoins sanitaires en Haïti.

Conclusions: Les enseignants et étudiants sont les acteurs académiques clés qui permettent de réaliser un programme cohérent et intégré visant le développement des compétences cliniques de base localement pertinentes dans un champ particulier de la médecine.

Messages à retenir: Cette expérience illustre une facette du partenariat équitable c'est à dire construire leur capacité avec les acteurs académiques locaux, ni devant eux ni derrière eux mais bien à côté d'eux, ce qui permet de les écouter et de chercher avec eux les ressources adaptées que peuvent offrir la technicité moderne et le partage proposé.

6D/5
D'un cours virtuel scénarisé en Prothèses au Serious Game : place du e-learning dans la formation initiale en Odontologie

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Contexte: Aujourd'hui, l'apprentissage en ligne est reconnu comme une méthode pédagogique efficiente et complémentaire pour l'enseignement. La Prothèse Fixée n'échappe pas à cet engouement technologique, notamment avec l'émergence des techniques d'empreintes optiques et l'incursion des logiciels de modélisation pour la Conception et Fabrication Assistée par Ordinateur (CFAO).

Résumé des travaux: Des parcours pédagogiques d'apprentissage granularisent notre enseignement magistral et scénarisent nos séances de travaux pratiques. Les supports pédagogiques utilisés sont le document word, le fichier power point, la vidéo, des bandes sonores enregistrées, et le rich média. Ces documents sont téléchargeables sur le bureau virtuel du webcampus. Un travail transversal réalisé avec le Certificat Internet et Informatique (C2i) renforce le travail collaboratif; des e-tests permettent de valider l'acquisition des connaissances par l'étudiant.

Résumé des résultats: Le bilan de cet enseignement montre que le blended-learning reste le plus efficace grâce au mélange des outils en présentiel et en ligne.
De plus, l'imagerie 3D suppléante progressivement l'imagerie 2D, et la simulation physique sur fantôme évolue vers de la simulation virtuelle en 3D. Le Serious Game prendra une place importante.

Conclusions: Le rôle majeur de l'enseignant reste pour une matière clinique comme la Prothèse Fixée, de veiller sur la

qualité et la maîtrise de ces nouveaux outils technologiques par les étudiants.

Messages à retenir: Chen-Yi Y., Yu-Sheng L.,Chien-Tsai L. Developing an interactive dental casting educational game. Computer Science and Information Technology 2010, 437 :40.

6D/6
La simulation à haute fidélité pour améliorer la communication et la collaboration dans les équipes interprofessionnelles aux soins intensifs

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Contexte: L'unité des soins intensifs (SI) est un environnement dynamique à haut risque. La nature interprofessionnelle de la médecine des SI prédispose à la survenue d'erreurs et le manque de communication en est souvent la cause. L'utilité d'une formation orientée sur la communication par simulation à haute fidélité a été évaluée.

Résumé des travaux: Dix équipes de 6 professionnels travaillant aux SI ont participé à une journée de simulation au centre Apprentiss (Université Laval). La moitié des équipes avait des débreffages orientés sur des aspects techniques (groupe témoin). L'autre moitié avait des débreffages orientés sur la communication (groupe expérimental). Les simulations étaient filmées et évaluées en aveugle par 4 observateurs utilisant des grilles de qualité de communication et de collaboration.

Résumé des résultats: Quarante vidéos ont été évaluées. Un accord satisfaisant entre les observateurs a été obtenu. Une amélioration significative des comportements de collaboration dans le groupe expérimental a été démontrée. La qualité des communications était très élevée dans toutes les sessions pour les deux groupes. Une mesure des échanges d'information a montré que le résident était le plus performant à transmettre et recevoir des informations-clé.

Conclusions: La simulation à haute fidélité améliore la qualité des comportements de collaboration dans une équipe interprofessionnelle de SI.

Messages à retenir: La simulation à haute fidélité interprofessionnelle est prometteuse pour les formations qui visent à améliorer la communication et la collaboration dans des équipes de SI. L'analyse des communications entre les travailleurs est très utile pour la compréhension du travail d'équipe et pour en améliorer l'efficacité.

6D/7
Les Serious Game et le monde virtuel en Odontologie : l'apprentissage par la conscience, la mise en situation par la 3D

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Contexte: La Young génération (génération Y) et la digitale native font place aujourd'hui à la génération web 2.0.
Résumé des travaux: Depuis plusieurs décennies, les jeux vidéo ont envahi notre vie quotidienne, notamment pour le divertissement et les loisirs. D'un autre côté, l'apprentissage par le jeu est reconnu comme une méthode pédagogique efficiente. Les Jeux Sérieux (ou Serious Game) prennent ainsi une place importante dans la professionnalisation des médecins et des chirurgiens-dentistes. Le Serious Game permet d'une part d'immerger le e-learner dans un espace de temps et de lieu très proche des situations cliniques réelles, et d'autre part de le rendre acteur de sa formation. Le monde virtuel en 3D permet de recréer une réalité virtuelle tant au niveau des objets (imagerie 3D) que des personnes (avatar).
Résumé des résultats: Le diagnostic et les choix thérapeutiques peuvent être totalement décidés par le gamer. L'apprenant évolue dans le jeu étape par étape grâce à des questions à choix multiples validant l'acquisition des connaissances. Le développement de Serious Game en médecine buccale permettra de répondre à des exigences de visualisation de plus en plus réalistes et à un design de simulation virtuelle de qualité.
Conclusions: Ces nouveaux e-outils de formation dynamiques soulignent l'intérêt majeur et prometteur des Learning Game, des Awarness Game, et des Serious Game en Odontologie.
Messages à retenir: Chen-Yi Y., Yu-Sheng L.,Chien-Tsai L. Developing an interactive dental casting educational game. Computer Science and Information Technology 2010, 437 :40.

6E Short Communications: OSCE 1

6E/1
Do OSCE station pass marks set by the Borderline Groups and Angoff methods remain stable over time?

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Background: With the development of banks of OSCE stations for use in undergraduate medical schools, some stations are re-used over several years of test administration. Especially at graduation level, it is important to investigate whether standard setting methods result in standards that are stable over time.

Summary of work: We collected data from graduation-level OSCEs at one medical school over 6 years, during which a number of stations were re-used over several years, with no changes. Both the Angoff and Borderline Group Method (BGM) standard setting procedures were applied to all stations over the same time period.
Summary of results: The variability in standards set for individual stations over time was similar for both Angoff and BGMs. However, the average standards set for individual stations were substantially more variable for the BGM.
Conclusions: Standard setting for OSCEs is influenced by the standard setting method used. There is more variability when the method used involves examiners scoring in live OSCEs than when standards are set in a collective group outside the actual test administration.
Take-home messages: Pass marks vary depending on the way examiners are asked to make judgements about minimal competence.

6E/2
Re-use of OSCE stations over several years: does student performance improve?

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Background: With the development of banks of OSCE stations for use in undergraduate medical schools, some stations may be re-used over several years of test administration. There are concerns that the re-use of stations and the 'leakage' of information about such stations would result in students being able to prepare and therefore scores would improve year on year.
Summary of work: We assembled data from graduation-level OSCEs at one medical school over 10 years. A number of stations were re-used over several years, with no change in construction, time allowed or scoring. Student scores for these stations were aggregated for each year of test administration and compared over the different years.
Summary of results: Of 86 stations used in consecutive years, higher mean scores were observed in 56 (65%) of stations. The largest effect was seen for clinical examination stations, where increases in mean scores were observed for 80% of re-used stations. In contrast, higher means scores were only observed for 47% of stations re-used in non-consecutive years.
Conclusions: Station re-use tends to lead to improved performance over time; this can be viewed as a security problem or an instance of assessment driving learning.
Take-home messages: Students learn strategically for tasks they anticipate will be tested.

6E/3
Improving OSCE Rater-Based Assessment

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Background: Efforts to improve OSCE rater judgments based on "impressions" has modest evidence in improving outcomes, perhaps due to limited understanding of how these impressions influence ratings. The integration of rater recruitment criteria, a re-designed rating scale; a mandatory faculty development process on the 1) rating scale, 2) rater judgments, & 3) case specificity may yield desirable outcomes on rater variability.
Summary of work: A rating scale was developed with behavioral anchors for rater impressions, completed before translating them into global assessments. Key features were included to guide assessing an Overall Global Rating. The faculty development process included: 1) recruiting raters who are experienced family physicians to assess IMGs for direct entry into family practice; 2) providing documentation on the rating scale and scoring procedure; 3) providing on-line practice with results collated; 4) providing raters with an advance copy of their case for exam day; 5) discussing on-line results and case-specific questions at exam day orientation; and, 6) providing feedback to raters on their ratings.
Summary of results: The process was piloted in a workshop at the Canadian Conference on Medical Education and feedback incorporated in a June 2012 OSCE.
Conclusions: Rater results will be presented and discussed.
Take-home messages: This approach is unique in improving how raters make assessments.

6E/4
How can we make feedback on an OSCE more useful for clinical learning?

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Background: Before the start of a three month period of a clerkship where they have to work as a novice resident students in their final year sit an extended one day OSCE. We wanted to explore if this examination could be used to give feedback tailored on their coming training episode.
Summary of work: We set up an OSCE of 10 stations of 30 minutes each, with standardized patients. Students were assessed on most relevant clinical competencies. The students got written feedback on their performance on each station. From 10 students a structured interview was obtained.
Summary of results: Most students reported that they would have liked to have more detailed feedback. They would have preferred specific and detailed feedback, instead of the relative grades of their achievements in comparison with their peers.
Conclusions: Adequate feedback should be detailed and tailored to the needs of the students. Their needs are directly guided by the demands of their clinical assignements. In order to give more useful feedback it is important to know what students' needs for feedback are.
Take-home messages: Giving feedback: it's not as simple as it sounds.

6E/5
Assessing the Feasibility of Implementing an Equating Procedure with a Large-scale Objective Structured Clinical Examinations (OSCE)

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Background: In high-stakes OSCE programs, it is often necessary to administer multiple test forms in any given window given the large number of candidates that are tested. Despite our best efforts, test forms can and will vary in regard to their overall difficulty. Consequently, some form of score adjustment is required to ensure that any differences in difficulty do not unduly impact candidates. Equating is the statistical process by which scores are adjusted to reflect differences in difficulty across forms and to ensure a fair testing experience for all candidates. The aim of this study was to assess the feasibility and impact of implementing equating with a large-scale OSCE.
Summary of work: The Tucker and the Levine equating methods were applied to scores from several administrations of a national OSCE. A set of common cases was used to form a basis for equating.
Summary of results: Changes to failure rates across OSCE administrations were used as an outcome measures. Preliminary results indicate that the failure rate based on different equating methods for one of the administrations would increase between 10% and 14 % whereas the failure rate for another administration would decrease by 1.5%.

Conclusions: While best assessment practices would suggest equating scores across OSCE forms, many of the assumptions that must be met to use these models are challenging for performance assessments. These issues will be further discussed in light of the findings of our study.
Take-home messages: Think before you equate.

6E/6
Understanding error variance in the OSCE: What can disparity between assessor global ratings and checklist scores tell us?

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Background: Measuring assessment quality is a cornerstone of best practice, with a range of global examination metrics (e.g. Cronbach's alpha) in widespread use. However, increasing focus is placed on the value of station level metrics in the detection and remediation of problems. Of particular interest is the measurement of error variance within the OSCE at station level.
Summary of work: To assist understanding of the factors contributing to error variance, we investigated the lack of agreement between predicted candidate performance, based on assessor global rating, and actual pass/fail decisions based on checklist scores. We measured both the magnitude (proportion of cohort 'misdiagnosed' as passes/fails by assessors) and asymmetry (disagreement between magnitude of passes and fails).
Summary of results: This analysis triangulates with other station level metrics in high stakes undergraduate OSCEs. Moreover, it offers additional insights into the nature of error variance, and suggested methods of remediation. The asymmetry measure proved sensitive in detecting improvements in station design with resultant reduction in error variance.
Conclusions: This station level metric offers a greater insight into causes of error at the station level within an OSCE, and assists in the design of subsequent improvements.
Take-home messages: This new measure is an essential tool in the analysis and quality improvement of clinical assessment

6F Short Communications: The Team

6F/1
Criteria of teamwork for educational teams: a Delphi study

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Background: Providing postgraduate training is a joint responsibility of a supervisory team. Because no instrument exists to measure teamwork in supervisory teams, we aimed to develop an instrument based on the results of a previous qualitative study on team work. For this purpose a modified Delhi method was used to study the importance of the characteristics for the evaluation of teamwork.
Summary of work: The results from our previous study suggest 7 teamwork themes, which were operationalized in 87 criteria. In 2011, 40 professionals (experts) were invited to assess the relevance and clarity of these criteria. Inclusion criteria were based on consensus within the expertgroup and the expertise of the researchgroup.
Summary of results: The expertgroup (32 professionals) reduced the number of criteria from 87 to 60 after the first Delphi-round and to 51 after the second round. The number of criteria in each theme ranged from 5 (the theme 'environmental factors') till 9 (the themes 'program director' and 'feedback').
Conclusions: Through selection and prioritization of criteria describing teamwork in supervisory teams an instrument of evaluating teamwork in postgraduate training could be developed. Research will have to further validate the instrument consisting of 51 criteria identified in this study.
Take-home messages: Criteria for evaluation teamwork in supervisory teams are now available.

6F/2
Successful pilot of a multidisciplinary simulation program for nursing and medical undergraduates

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Background: In 2010, a successful simulation program for Year 3 medical students was established. The challenge was to increase fidelity and enhance multidisciplinary communication at an early stage through joint simulation with nursing and medical students.
Summary of work: Year 3 medical and nursing undergraduates enrolled onto a pilot multidisciplinary

simulation program. Through curriculum mapping, scenarios to address learning objectives were written. Junior doctors and nurses were provided training to function as facilitators. Qualitative and quantitative feedback was collected from both students and facilitators.

Summary of results: • 24 medical and 24 nursing students enrolled. • Mean educational experience rated 4.8/5 • All students highlighted enhanced skills (communication, handover, time management) in dealing with acutely unwell patients and improved understanding of each others roles. • All facilitators (n=17) felt the experience had a positive outcome on their clinical practice.

Conclusions: Multidisciplinary team simulation enhances human factor training in undergraduate students. It provides an early appreciation of contrasting priorities in achieving a common goal. Facilitators enjoy an enhanced learning experience, contributing to their continued professional development.

Take-home messages: • Multidisciplinary simulation enhances communication between medical and nursing undergraduates leading to improved understanding of each others roles prior to qualification. • Multidisciplinary simulation should be introduced into undergraduate medical and nursing curricula.

6F/3
Teaching methods in Interprofessional Education: a standardized patient and a paper patient

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Background: Interprofessional Education (IPE) using standardized patients (SPs) to implement team-working is increasingly common. This study compared 2 teaching methods of a simulated-patient IPE (SP-IPE) and paper-patient IPE (PP-IPE).

Summary of work: Seventy-four students (24 medical-, 25 pharmacy-, and 25 nurse) with no teamwork training were asked to develop a care plan using either SP-IPE or PP-IPE. Trait Emotional Intelligence Questionnaire Short Form (TEIQue-SF), Jefferson Scale of Physician Empathy (JSPE) and free-description questions (communication and professional barriers) were administrated pre- and post training. TEIQue-SF and JSPE were analyzed statistically. Free-text comments were analyzed qualitatively.

Summary of results: Both TEIQue-SF and JSPE scores increased significantly on SP-IPE and PP-IPE. TEIQue-SF score of pharmacy and nursing students increased, but medical students showed no difference in both teaching methods. Qualitative analyses revealed that 1) images of a doctor as a superior person. 2) opinions were with-held when not confident or in conflict with others, 3) nursing students worried that others might show no understanding about their roles. Communication skills underlined: 1) mutual respect, 2) accept other's perceptions, and 3) discuss on an equal position.

Conclusions: Both approaches improved students' EI and empathy, increased awareness of professional barriers and improved communication skills to break down barriers. Active teamwork provides effective training.

Take-home messages: SP-IPE and PP-IPE are equally effective in improving teamwork and professional attitudes.

6F/4
Interprofessional Education (IPE) and the hidden curriculum: Do students see practicing teams model ineffective collaboration?

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Background: Teaching collaboration through IPE is a critical curricular component in most medical schools. There is concern that clinical clerks may be unlearning IPE in practice settings.

Summary of work: 93 clinical clerks completing psychiatry rotations over 3 years responded to questions about their experiences related to aspects of their psychiatry team's functioning.

Summary of results: Students completed questions related to conflict management, trust, respect and shared leadership. 30% reported that conflict was not effectively managed noting concerns about conflict avoidance and aggression. Trust was a concern for 32% of clerks who mentioned issues related to practicing outside of scope and team dynamics. While 85% of clerks reported seeing general respect, 51% had seen and/or experienced instances of disrespect including backbiting, derogatory comments made in public and rudeness. Shared leadership was reported by many students as present, but analysis of examples revealed 62% of students had actually witnessed a lack of shared leadership.

Conclusions: Many students are witnessing ineffective collaboration in their practice settings. Of particular concern are the lack of both respect and shared leadership which students are reporting.

Take-home messages: Students and practicing teams need to be better educated about what constitutes effective collaboration and how to best achieve it.

TUESDAY 28 AUGUST 2012

6F/5
The impact of undergraduate nursing and medical education on the ability to collaborate

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Background: Collaborative interprofessional practice is being promoted worldwide. However, the impact of nursing and medical education on graduates' ability to collaborate is unclear.
Summary of work: Through a hermeneutic qualitative study eleven junior registered nurses and eleven junior residents from a training hospital each, in Canada and the United Kingdom (UK) were interviewed. Data was analyzed through iterative naïve and thematic interpretations.
Summary of results: Medical students were disposed to collaboration but lacked workplace training and application. Interprofessional learning was inconsistent and collaboration was not consistently modeled by faculty. In nursing schools, training for collaboration with physicians was largely transactional.Upon transition to the workplace, its contingencies as opposed to undergraduate training determined how junior residents and nurses collaborated across professions. Residents learned to preface doing the best for the patient, while nurses became proficient at routine tasks and found fulfillment as the patient's advocate. These roles sometimes conflicted and collided. Interdependent but competing priorities led to adversarial expressions of uniprofessional identity and derogatory out-group stereotyping in busy wards, but acute situations where goals coalesced prefaced an interprofessional identity.
Conclusions: Neither contemporary professional education nor hospital environments sustained consistent collaborative practice in either location studied.
Take-home messages: Contingencies of workplace outweigh the impact of education as the determinant of collaboration.

6F/6
Assessing resident collaboration skills: reliability and validation of the Interprofessional Collaboration Assessment Rubric

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Background: Interprofessional learning environments currently recognize the need for competency-based evaluations of medical learners. Currently, the assessment of medical residents in collaboration appears to be limited with little interprofessional input. The ICAR intends to fulfill the growing demand for formative or summative assessment for collaboration skills of medical residents.
Summary of work: Phase I – Pilot study to determine inter-rater reliability of the ICAR. 16 anaesthesiology residents will each be assessed over a five day period by 3 to 5 faculty during normal learning encounters. This phase has been approved by ethics approval. Phase II – 360-degree evaluation of medical residents to determine reliability and validity of ICAR across multiple medical disciplines. 16 residents, four residents in four different medical faculties, will be evaluated after a four week rotation by their attending physician, nurses, and allied health professionals.
Summary of results: Research and data collection is on-going but will be completed and analyzed by start of AMEE conference. Ascertaining the inter-rater reliability and validity of the ICAR through statistical analysis (Fleiss' Kappa statistic) and feedback from evaluators and residents.
Conclusions: If the ICAR proves to be both reliable and valid for assessing collaboration in medical learning environments it will be promoted for introduction into faculty curriculum locally, nationally, and internationally.
Take-home messages: For interprofessional education to be successful and continually progress, a set of objective standards is needed for the assessment of those working in multidisciplinary healthcare environments.

6G   Research Papers: Surgical Education

6G/1
Towards a theoretical language of uncertainty: implications for surgical education and training

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Introduction: Effective management of uncertainty is a critical skill for clinicians. Theory derived from Naturalistic Decision Making research in non-clinical settings characterizes uncertainty as a condition to be eliminated, defining it as a combination of inadequate understanding, lack of information and conflicted alternatives . However, in clinical settings such as surgery, uncertainty is a recurring part of everyday practice. This study explored how uncertainty was perceived and handled by experienced surgeons by focusing on their behavior during and reflections on challenging intra-operative situations. Our purpose was to produce a theoretical language that can support further research and curriculum development in the surgical domain.
Methods: The study used an ethnographic methodology consisting of 130 hours of non-participant observation and 26

semi-structured interviews immediately following 26 surgical cases. The 26 cases, drawn from seven staff surgeons from a variety of surgical specialties, were purposively sampled after being pre-identified by the surgeon as "likely to include challenges". We combined template and inductive analyses. In the template analysis, the existing theory1 was used to identify instances of uncertainty in the dataset. When template analysis did not fully explain recurrent patterns in this dataset, inductive analysis was used to elaborate and refine the concepts.

Results: Template analysis identified 215 instances of uncertainty and confirmed that existing concepts from the literature(1) are relevant to the surgery domain. However, inductive analysis both revealed additional concepts and positioned existing concepts in new relationship to each other. The two key themes were judgment issues, and situational factors, each with corresponding subthemes. Axial coding of these themes revealed that, while every instance of uncertainty contained at least one judgment issue, only some instances of uncertainty were further complicated by situational factors.

Discussion: These results enable us to build on existing conceptualizations of uncertainty to develop a language that captures recurring features of uncertainty in the surgical context. Uncertainty is characterized as something to be managed rather than eliminated, with judgement emerging as the central activity of 'management'. This characterization may serve as an overarching framework to further investigate how surgeons create and implement strategies to cope with difficult and unexpected events.

Conclusions: While further research is required to elaborate and test the explanatory power of this language, we anticipate that it will help surgeons and surgical trainees engage in explicit discussion about the multiple facets of intra-operative uncertainty present in any surgical procedure, which currently remain part of tacit learning.

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6G/2

How surgeons think: An exploration of mental practice in surgical preparation

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Introduction: Mental practice is defined as the process of systematically imagining objects and movements. Studied and used extensively in sports psychology, mental rehearsal and visual imagery in surgery are still in their infancy. The purpose of this study was to explore the ways in which surgeons used mental practice in preparation for surgery.

Methods: Semi-structured interviews were conducted with 13 surgeons (10 general surgeons, 2 plastic surgeons, 1 orthopedic surgeon; 3 females, 10 males) at 3 academic hospitals who were purposively sampled for different experience levels and specialties. Imaging ability and content were explored through self-assessment (e.g., Are you a good imager? Can you describe the type of mental imagery or visualization you use?). Questions focused on the advantages and disadvantages of mental practice, structure of imaging sessions and purpose of imagery (e.g., Do you think mental practice improves your surgical skills? Has your use of mental imagery changed over the course of your career?). Data collection and analysis occurred in an iterative manner. Data were coded and analyzed using a constructivist grounded theory methodology. A reflexive approach was adopted throughout.

Results: All 13 surgeons used some degree of mental practice techniques. These techniques included visualizing procedures from start to finish, mentally practicing only pivotal steps in an operation, as well as imaging the surrounding physical and social environment. None of the surgeons interviewed reported kinesthetic mental practice. Visualization techniques were also used at different time-points, including before surgery to plan out appropriate steps or to highlight overlooked ones, during surgery to re-orient or to troubleshoot if faced with complications and after surgery to reflect, correct or to improve performance. Mental practice was also used outside the OR to teach new surgical procedures and to interpret radiologic images. Novice surgeons were found to rely more on mental practice for routine procedures, while experienced surgeons described these as automatic and turned to mental practice for complicated or new operations. A common reason for using mental practice was to alleviate anxiety. Mental imagery also had motivational aspects and was used to "psych up" surgeons for the OR and to build confidence.

Discussion: This study begins to characterize the ways in which mental practice is used by surgeons and thus provides a conceptual framework to guide future research. Mental imagery is used by surgeons with varying levels of expertise, in a variety of locations and can involve visualizing procedures, colleagues and support systems. Reasons why surgeons use mental practice can be grouped into four major domains: cognitive, technical, psychological and social.

Conclusions: This exploratory study suggests that mental practice is an integral component of preparation for surgery. Although surgeons are not formally taught mental practice techniques, the approach might have great potential for learning surgical skills and for improving how experienced surgeons become excellent ones. This conceptual framework may be used to inform work in this area, including explorations of how these processes may differ across different types of surgical specialties or how imaging ability may impact on how surgeons prepare.

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6G/3
Surgical teaching: a Qualitative analysis of live video recording in the operating room

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Introduction: The practice of surgical apprenticeship is inherently complex. The operating room is a high-stress environment with many participants, and teaching surgeons have multiple competing responsibilities. Most agree that there are surgeons who are intuitively good teachers, but previous characterizations of good intraoperative teaching have relied on trainee recall (1-4) or the opinion of expert educators. (5) Our objective was to provide a naturalistic, data-driven account of pedagogical techniques in a teaching case by capturing live surgical teaching behaviors and analyzing them at a fine level of detail.
Methods: We filmed 13 participants in 5 surgical cases at a University teaching hospital. We transcribed participants' utterances, body movements, actions, and gestures, and a description of the scene or context. In follow-up interviews, attendings and trainees watched video clips of their teaching case and answered open-ended questions about their surgical teaching methods and clarifying questions specific to teaching incidents captured on film.
Using a grounded theory approach, we examined the transcripts for what might be construed as a teaching behavior. Through constant comparison, emerging themes were compared with fresh data and the codes were further refined. Once common themes emerged and reliable ways of recognizing them were developed, participant responses were independently coded for examples by 2 authors (GS, EL). Data collection ceased once no new themes were discovered. Inter-rater reliability was assessed on the entire data set using Cohen Kappa statistics. This study was designated as exempt by the University of Pittsburgh Institutional Review Board.
Results: Attending surgeons relied heavily on actions and gestures and the cooperation of their trainees, and less on verbal speech, to achieve both surgical and pedagogical goals. Specifically, attendings issued direct commands and often prefaced them with "politeness" phrases so they appeared not to be orders; frequently used one- or two-word phrases; described and explained in short bursts the rationale behind the current steps; referred to future steps one or two at a time; questioned the trainees; and used humor. They physically initiated actions that required immediate corollary actions from the trainee, used gestures to point to the field or illustrate a step or anatomical structure, indicated which instrument is to be used next, supported the tissues to facilitate the trainee's next step, retracted, repositioned trainee's instruments, and put their hands on the trainee's hands to guide them. We will present numerous colorful examples of all of these codes. Attendings were often surprised by their activities. Inter-rater reliability was high using Cohen's Kappa with 0.77 for verbal categories and 0.76 for physical categories.
Discussion: This is the only study we know that uses videotape to define intraoperative teaching at its fundamental level of in vivo behavior. We captured, categorized, and defined highly specific pedagogical aspects of live intraoperative teaching that can serve as a measurable, replicable basis for studying teaching in a high-stress environment. Our coding scheme includes teaching modalities never described before.
Conclusions: Surgical teaching observed in vivo is complex and consists of common and repetitively utilized verbal and physical behaviors.
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6G/4
Developing Self-Regulated Learning in Surgical Training: Learning from Expert Musicians

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Introduction: Self-regulated learning (SRL) is a framework for lifelong learning which has been demonstrated to accelerate and promote learning and development (Zimmerman,1989). With limitations to surgical training time and reduced theatre exposure, the ability of surgical trainees to efficiently self-regulate their learning is paramount. Self-assessment is a

critical step within this cycle (White & Gruppen,2007). However, evidence suggests that surgical trainees are not accurate at assessing their level of skill (Sidhu et al,2006) and as such, the process of SRL is inherently flawed. In studying approaches towards SRL amongst expert musicians, in whom this process is fundamental to development (Hallam,2001), transferrable thoughts and approaches may be identified that can potentially develop the process of SRL within surgical training.

Methods: Retrospective semi-structured interviews were performed with four expert British cellists, defined by stringent criterion. Thoughts and perceptions towards skill development, approaches to independent practice, and ultimately the development of self-assessment and self-regulation were explored. The interviews were transcribed and coded, identifying recurring themes and concepts, thereafter reviewing through the lens of SRL theory (White & Gruppen,2007).

Results: Seven themes were identified; listening, understanding, autonomy, learning from others, adjustment and experimentation, motivation and strategy. The ability to listen to one's performance and identify strengths and weaknesses was deemed the most critical process in the development of musical skill. This was considered the parallel for self-assessment. To accurately perform this, the musicians had developed internal reflective skills and self-critical faculties through the direction from their master teachers, encouragement and learning from peers, intense forethought and planning, and exposure to learning resources and strategies, including analysing video-recordings of performances.

Discussion: The development of SRL amongst expert musicians relies on several factors, both internal and external. These external factors include the environment within which they learn and the influence and inspiration from peers and teachers. The internal factors include the autonomy of the musicians, ability to focus their learning and the importance of internal reflection and intrinsic motivation. Within surgical training, there is evidence to suggest that morale is low and autonomy compromised potentially resulting in lower motivation levels (Pereira & Dean, 2009). The results of this study would suggest that to improve self-assessment amongst surgical trainees, efforts should be multifactorial. With closer guidance from supervisors, exposure to master teachers and improved integration with peers, the external factors may be addressed. With improved trainee autonomy and encouragement towards striving for excellence, internal factors may also be addressed. In addition, the use of resources such as video-tape analysis could be considered to further facilitate the development of accurate self-assessment.

Conclusions: Accurate self-assessment is paramount to SRL. This study highlights potential areas to target the shortfalls within self-assessment amongst surgical trainees.

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6H Short Communications: Continuing Professional Development 1

6H/1
Distribution of Kolb's learning styles among physicians and their potential application in the design of continuing medical education (CME): a systematic review and meta-analysis

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Background: The rapidly growing body of medical knowledge together with time constrains of physicians call for efficient CME. According to the Learning Style Hypothesis (LSH) application of learning styles may be used to increase educational efficiency. It is unknown whether physicians' learning styles measured with the Learning Styles Inventory (LSI) are typical for specific specialties. We therefore reviewed the literature and additionally investigated the evidence to apply the LSH.

Summary of work: We performed a systematic review and meta-analysis. We searched Medline, Embase, ERIC and PsychINFO, including studies that used Kolb's LSI in physicians.

Summary of results: 15 studies enrolling a total of 1315 physicians of seven specialties were eligible. Subsequent analyses revealed statistically significant prevailing learning styles for: internal medicine and surgery ("converging"), psychiatry, occupational medicine and general practice ("assimilating") and paediatrics ("accommodating") (goodness-of-fit test, all p<0.02). Only 4/15 studies investigated application of Kolb's LSI based on the LSH.

Conclusions: It is possible to determine typical prevailing learning styles for the above specialties. However, little evidence supports the efficiency of application of learning styles for the design of CME.

Take-home messages: Future research should aim to justify the use of LSH or alternative theories for potential application in CME.

TUESDAY 28 AUGUST 2012

6H/2
What do surgeons think about Continuing Medical Education? – A UK survey

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Background: Continuing medical education (CME) is vital for maintenance of patient safety. Opinion of senior surgeons regarding content, assessment, ethics and integration of CME into everyday practice is required in order to optimise learning outcomes.
Summary of work: Senior UK surgeons participated in an online survey. Participants ranked ten pedagogical subjects in order of importance to CME. Opinion regarding CME availability, assessment of outcomes, and ethical issues was collected.
Summary of results: 158 surgeons responded to our online survey of opinions (response rate 61%). Subjects identified education centred on 'Clinical Knowledge' as most valuable (Mean Rank 8.62 (+/- 2.23)). The need for evidence-based CME was highlighted.
Conclusions: CME sessions are a popular forum for surgeons to obtain clinical knowledge updates and consider novel patient safety strategies. It is vital that programme directors consider requirements of different cohorts. There are important ethical and legal issues that are yet to be formally considered.
Take-home messages: CME sessions should be clinically orientated. Further research is required so that validated structured programmes of CME can be developed to optimise patient safety. A holistic evidence-based approach to provision of CME in surgery is required in order to address the needs of 21st century surgeons.

6H/3
Continuing medical education in Finland: who is able to attend?

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Background: Possibility to attend continuous medical education (CME) is dependent on working environment and economical constrains. Finnish Medical Association (FMA) recommends at least ten days of external CME each year. The goal of this study was to explore what are the factors influencing CME attendance.
Summary of work: Data for this study were collected in a national questionnaire administered by FMA in years 2007, 2008 and 2011 (average response rate = 59%; N ranging from 4,712 to 13,708).
Summary of results: Average number of days attending external CME in 2010 was 7.9 with wide difference between specialties and physicians in different positions. One tenth did not attend external CME at all within the year. Primary health care physicians had less CME than hospital physicians. More results will be presented.
Conclusions: CME attendance is influenced by several factors like specialty or position. Numeral recommendations of CME might not be enough for assessing sufficiency of CME, however, they protect physicians' right to attend CME.
Take-home messages: Physicians need to have an active role in planning CME with employers bearing in mind local circumstances.

6H/4
Development of tools for continuous professional development for Finnish physicians: a pilot in a primary health care

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Background: Medical profession requires multiple skills and there is a growing need to document and assess professional's development and to acknowledge work environment as a major learning environment.
Summary of work: Taitoni-platform is a personal web tool designed to manage physician CPD. Its' core function is to encourage physicians to set learning goals and to document their development in formal and informal learning activities. The tool is accompanied and linked with a national CME-calendar. Platform use and usability is being tested in Helsinki primary health care centre with fit to their competence management process. Employers will get reports of groups of physicians in numbers and in graphics. In future Taitoni may form a national CPD assessment tool.
Summary of results: Total of 78 physicians tested Taitoni-tool for 6 months. Of them 67 (87%) were women and their mean age was 40.2 years (SD=9.8 years). Formal Educational events formed a majority of recorded learning, whereas informal learning was reported less often. Competencies related to the learning events as measured with CanMeds-roles distributed rather evenly.
Take-home messages: The linkage of CPD documentation to work environment is essential and collaborating with employers will stimulate personal development management in health care.

6H/5
Commitment to change: lessons learned in applying this tool in the education of orthopedic trauma and spine surgeons worldwide

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Background: The AO Foundation is a leading provider of education to orthopedic trauma and spine surgeons worldwide. It has now integrated the commitment to change (CTC) practice survey as part of a Learning Assessment Toolkit, which is the AO's published set of instruments designed to help ensure that participant gaps are identified and subsequently addressed during educational events.
Summary of work: During 2010 and 2011, we implemented the CTC survey tool in 20 face-to-face educational courses delivered to approximately 600 practicing trauma and spine surgeons in 10 different countries.
Summary of results: Completion rates for the CTC survey across all 20 events ranged from 35% to almost 100%. Response rates at 3-month follow-up have been low but valuable data have been gathered from every individual course. The cumulative data have been analyzed by surgeon taskforces responsible for global program/curriculum development.
Conclusions: The CTC survey tool provides valuable information to program planners and makes the link between educational activities, surgeon performance, and improved patient care clearer to participants. Participation rates are an ongoing challenge and clearer communication regarding the value of this educational tool is probably required. The data from our first implementation of the CTC survey suggest that this tool helps assess whether participation in our educational activities results in benefits to patient care.
Take-home messages: 1. Commitment to change is a valuable tool in educational program evaluation. 2. Completion rates depend on clear communication and convenient processes for participants and may be improved by providing technical implementation tools.

6H/6
Collaborative learning of health professionals in online communities of practice

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Background: Observatory for Quality of Health Training developed new spaces for collaborative working and learning of health professionals, to promote an active and collaborative model of learning and encourage shared team-work.
Summary of work: The 'Communities of practice for quality and patient safety' is a website that allows health professionals to create and manage online communities of practice, including blogs, forums, chat, micro-blogging, private messages, shared event calendar, shared files managing, links and photos.
Summary of results: Since June 2011, 476 users registered on the website, sharing 241 files, 56 links, 66 blog posts and 1.292 messages. 29 groups were created around topics like: healthcare processes, quality in professional training in healthcare, patient safety, quality systems and management, professional development, process management.
Conclusions: Results about activity of health professionals in the website show their high participation in the platform, proving their interest in this kind of methodology and the usefulness of this tool. Using a virtual space to exchange knowledge is encouraging development of horizontal and no-hierarchical work dynamics between health professionals, who are both learner and trainer in these processes.
Take-home messages: Collaborative learning activities allows the generation of a continuous and open dialogue about critical elements of work, and sharing knowledge that can improve the quality of healthcare practice.

6H/7
Substantive Equivalency of Global CPD Systems

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Summary of work: In 2010, the Royal College of Physicians and Surgeons of Canada surveyed 115 organizations across 26 countries to assess whether these international CPD systems were substantively equivalent to the Royal College's Maintenance of Certification (MOC) Program. This process enables Fellows, who are living and practicing outside of Canada, to maintain their Royal College Fellowship through participating in a program deemed substantively equivalent to the MOC Program.
Summary of results: The analysis of quantitative and qualitative survey data identified 71 international CPD systems in 14 countries as substantively equivalent to the MOC Program. The survey data also provided a unique summary of the continued development of CME/CPD systems globally across multiple domains:

-principles and values governing international CPD programs
-structure, requirements and mandatory elements of CPD programs
-inclusion of CPD accreditation systems (of activities or provider organizations)

Conclusions: The Royal College has developed a process to assess substantive equivalency between its MOC Program and other international CPD systems. The criteria to recognize international systems are based on a set of values, principles and metrics that respect culture and context.

Take-home messages: The process to define substantive equivalency fosters international collaboration and dialogue and also establishes the basis for recognition of global CPD systems.

6I Short Communications: Outcome Based/Competency Based Education 2

6I/1
Competency-oriented supervision: an evidence-based and practice-based model for ambulatory care settings

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Background: Supervision should foster the development of competence. Traditional models of supervision focus mostly on expertise and few models are adapted to ambulatory settings.

Summary of work: We built upon existing models with demonstrated impact, promising competency-oriented supervision strategies, and studies describing actual supervision practices focusing on competence. Guided by the theory of cognitive apprenticeship, we developed a model of competency-oriented supervision adapted for family medicine residency.

Summary of results: The model describes supervisee's and supervisor's behaviors. It is organized under three moments of supervision, with five mottos and their specific behaviors: 1) at the start of the day: "Establish a learning contract"; 2) for each case: "Commit", "Be explicit" and "Seize the opportunity around competencies"; 3) at the end: "Share and note the feedback".

Conclusions: This is the first supervision model intended specifically for competency-oriented supervision in the ambulatory care setting. It is based upon best evidences on behaviors conducive to a higher level of case discussion. It integrates supervisee's and supervisors' perspectives and actively engages learners. It was validated locally. Laval University's Model seems useful to mobilize residents and supervisors in working together toward a better output of their supervision encounters.

Take-home messages: Supervisor and supervisees behaviors must change to promote the development of competence during supervision.

6I/2
Development of "Competency-based Postgraduate Training (CBPT) Cruces Hospital Project-2008" (2008-2011). The first experience in Spanish hospitals

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Background: Competency-based training is not developed in Spanish medical schools. In 2008, the Postgraduate Medical Education Unit at Cruces Hospital (300 residents, 40 specialities) adopted a competency-based framework for postgraduate training in trying to change the educational model.

Summary of work: 1) Competency-based framework (Teaching Vision) is based on 7-Domains (7-D): Professionalism; Communication; Patient Care; Medical Knowledge; Population Health and Health Systems; Practice-Based Learning and Improvement; Management of Information. 2) Strategy of Implementation: a) Meeting with Hospital Board, Heads of Departments and Teaching-Supervisors. b) Training programme in competencies directed on Supervisors and Residents. c) Assessment System: New Evaluation Committee. New methods for formative assessment based on 7-D (Global Rating, Supervisor-Residents feedback and self-assessment forms, and Reflexive Portfolio).

Summary of results: The Project was developed through a Supervisor and Residents leadership group, implementing the new formative assessment system and the Reflexive Portfolio: 85% of 537 documents (2010 and 2011), include reflexions on 7-D.

Conclusions: We have defined a new Teaching Vision and assessment system based on 7-D. The implementation through a multifaceted strategy has enabled us to introduce CBPT in our hospital as the first experience in Spain.

Take-home messages: It is possible to put into practice the competency-based training in residents with no previous experience in their universities.

6I/3
Building competency profiles: a Brazilian experience

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Background: Profound changes in the world of work such as increased flexibility, integration and globalization of production processes have determined new demands in professional training. The idea of qualification oriented by formal degrees has been questioned and competency oriented training has become more prominent. A Brazilian experience in building competency profiles for health professions and for medical specialties has been developed that emphasizes the analysis of the work process and of the skills required for a competent practice.
Summary of work: The methodology used is based on the competence concept that articulates (i) the social dimension of recognition and legitimacy granted by different actors involved in professional practice, (ii) the actions and features inherent to each profession/specialty, (iii) the combinations of skills required for excellent performance, and (iv) the different contexts of professional practice.
Summary of results: The practice of professionals considered to be competent by different actors have been studied and the profiles derived from this process have been validated by participants and by institutions/professionals considered relevant for the career/specialty.
Conclusions: The experience of building competency profiles in healthcare showed how distant academic knowledge legitimized by training institutions is from expertise built in the world of work.

6I/4
Mapping and management of learning outcomes in relation to General Practitioner Specialised Training

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Background: There is an increasing requirement in the continuum of medical and healthcare to map curricular activities and resources to explicitly defined learning outcomes.
Summary of work: In online support and distance education contexts the mapping of resources, assessments and teaching events to hierarchical outcomes serves many purposes. It aids the navigation and visibility of online resources within a structured environment. Also, mapping gives the ability to

describe how online representations of resources, assessments and teaching events map to regulatory curriculum outcomes, therefore serving an important audit purpose.
Summary of results: This presentation explores how mapping has informed the ongoing development of the South East Scotland General Practitioner Specialised Training Community of Practice Support Environment (GPST CoPSE).
Conclusions: Using COM:MAND (Curriculum Outcome Mapping, Management and Delivery), a suite of tools that enables users to manage and map curricula outcome sets, the GPST CoPSE resources have been mapped against the Royal College of General Practitioners curriculum data.
Take-home messages: The impact of outcome mapping, the emergence of new tools, and the consequences for the structure of online support environments suggest how reporting requirements, training activity, resources and community growth will dovetail to form the core of 21st century online educational support systems.

6I/5
Using backward planning to create competencies for curriculum development in pediatric orthopedic trauma

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Background: AOTrauma is in the process of developing a global competency-based curriculum addressing the needs of practicing and trainee surgeons who manage pediatric orthopedic trauma. Central to the curriculum are competencies and objectives developed using a backward planning approach.
Summary of work: A taskforce composed of three international surgeons and educationalists was mandated to develop a comprehensive program of study based on patient problems and the needs of the orthopedic trauma surgeon community. Using a backward planning process, several workshops during 2011 and 2012 resulted in the development of a competency-based framework that is now being implemented in instructional design, faculty preparation, learner-centered resource development, and self-assessment.
Summary of results: Clear competencies and objectives that are related directly to patient problems were developed for pediatric orthopedic trauma and provide a coherent basis for instructional design processes.
Conclusions: A backward planning approach to competency development contributes to the effectiveness of educational activities, providing a clear framework for fulfilling the learning needs of these surgeons based directly on the patient problems they face.

Take-home messages: A backward planning approach to defining surgeon competencies provides a coherent and educationally sound basis for curriculum development. Competencies developed in this way provide a robust framework for instructional design, faculty preparation, resource development, and assessment.

6I/6
Addressing Comprehensiveness in Experience and Assessment in a Competency-based Curriculum

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Background: Family physicians provide continuous, comprehensive care to patients. Education of family medicine (FM) trainees requires a comprehensive patient care experience linked to a comprehensive assessment.
Summary of work: The Department of Family and Community Medicine at the University of Toronto, a distributed program for 324 trainees, utilizes the Resident Practice Profile (RPP) to determine comprehensive exposure to content areas such as undifferentiated problems, preventive medicine, chronic diseases, conditions with a strong psychological component, procedures, acute self-limiting and life-threatening conditions. A work-based formative feedback system (Field Notes), linked to the RPP, ensures a comprehensive assessment of trainees.
Summary of results: The RPP / Field Note system has been used since July 2011. A total of 1665 Field Notes (5.1 per resident) have been completed in the first 6 months. The CanMEDS-FM role most likely to be addressed was FM-Expert followed by Communicator. The content areas were all fairly equally assessed with the exception of acute life-threatening condition.
Conclusions: The RPP / Field Note system provides a feasible method to address comprehensiveness in the education of FM trainees by linking clinical content to assessment.
Take-home messages: It is important to ensure comprehensive educational exposures for FM trainees. Linking Field Notes to practice profiles allows for a comprehensive assessment.

6I/7
Determining Impact of Competency Based Education - A National Program Evaluation Approach

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Background: Competency Based Education is being advanced worldwide. The College of Family Physicians of Canada (CFPC), launched its Triple C Competency Based Curriculum (Triple C) for family medicine residents in 2011. To measure its impact, the CFPC has developed an evaluation plan to consider impact on learners, patients and the broad health system. The purpose of this presentation is to share the logic model and its development for use in the CFPC's evaluation of its competency based approach to family medicine education.
Summary of work: Based upon a comprehensive review of the literature and stakeholder interviews, process and outcome indicators were iteratively developed and tested to develop a program evaluation logic model for competency based education.
Summary of results: Surveys for use upon entrance, exit and in practice have been created longitudinally to measure longitudinal impact.
Conclusions: The logic model provides the basis for the development of outcome measurement processes for learners to be used to inform residency program planners.
Take-home messages: Competency based education focuses on outcomes. Residency education programs have an obligation to measure its intended curriculum outcomes. It's time to use comprehensive program evaluation methodologies.

6J Short Communications: Clinical Teaching 2

6J/1
Teaching information management for use in the consultation

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Background: The consultation is one of the most important contexts in which a doctor works. In recent years the consultation environment has changed enormously through the democratisation of medical information via an increasingly open medical literature, powerful search engines, and the omni-present internet.
Summary of work: This presentation describes a spiral, coherent, multi-faceted approach to helping undergraduate medical students develop the skills required to make use of

information in real-time during consultations, so they can better overcome Muir Gray's information paradox.

Summary of results: Medical students highly value this teaching, feel able to make use of it in their future consultations with patients (94.6%) and feel the quality of their consultations will improve as a result (93.8%).

Conclusions: The modern consultation is an information dense environment and medical students need to develop the skills necessary to manage the multiple information streams present within the consultation efficiently for the good of the patient and to maximise their own effectiveness. This programme has been very well received, but we will develop it further.

Take-home messages: Information management is integral to the consultation. We are interested in discussing the integration of the information management skill set into the consultation with other groups.

6J/2
A "core" physical exam for students: results of a national survey

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Background: Students are taught to do exhaustive head-to-toe physical exams with little attention to the clinical relevance of maneuvers. We hypothesize a better way is to teach a brief "core" exam along with "clusters" of clinically related maneuvers to be added to the core only as indicated by specific clinical presentations. Our purpose was to determine if educator consensus exists regarding such a core exam.

Summary of work: We emailed a proposed exam to U.S. medical school pre-clerkship clinical skills course directors (PCCSs) and clerkship directors of internal medicine (CDIMs), asking them whether each maneuver should be required of third year students on every inpatient medicine admission, or only if clinically indicated. Respondents' suggestions and comments were also elicited.

Summary of results: 91 PCCSs and 83 CDIMs from 132 U.S. schools responded. 37 exam maneuvers were deemed "core" by over 50% of all 174 respondents, with close agreement between PCCSs and CDIMs.

Conclusions: Educators achieved consensus on a core physical exam for students to perform on every admitted patient.

Take-home messages: The high response rates and agreement among respondents indicates widespread interest in better teaching the physical exam. A pedagogy whereby a core exam is taught and supplemented by clusters of clinically relevant exam techniques may be one way.

6J/3
The general physical examination during the clerkship internal medicine: what do medical students actually do?

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Background: In practice direct observation of physical examination skills during the clerkships rarely takes place. In a previous study a consensus was reached on which physical examination components medical students should include in a general physical exam.

Summary of work: One hundred students performed a general physical examination on a standardized patient as they had practiced during the clerkship internal medicine. Frequency of performance of each component of the physical examination was counted on the recording of these physical examinations. Performance was assessed as either correct or incorrect using a checklist of short descriptions of each physical examination component.

Summary of results: Many components of the agreed standard physical examination were not included by the students. The main emphasis was on examination of general parameters, heart, lungs and abdomen. Many parts of the physical examination were not done as was instructed before. Interrater reliability was high for judgment of the total physical examination (0.79-0.92) but low for judgment of the correctness of performance.

Conclusions: Performance of the physical examination after the clerkship internal medicine shows many deficiencies.

Take-home messages: Important omissions in the performance of a physical examination can only be discovered by actual observation of students.

6J/4
Understanding physicians' interaction with medical students in daily practice

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Background: Medical students' learning can be regarded as a dynamic interplay between knowledge and identity development, reflected in and nourished by participation. The way physicians interact with them influences medical students' development but constitutes physicians' self perception and related action as well.

Summary of work: We used physicians' narratives to reveal how they made meaning of student interaction and how this guided their (inter)action. During a ten week general practice clerkship, characterized by one-to-one supervision, seven physicians used audio recorders to describe and reflect on moments of interaction with their student regularly. Halfway through and at the end of clerkships, physicians were interviewed by JZ. All transcripts were read independently and discussed reflectively by JZ, TD, LJ, and PZ, using a discourse analysis approach.

Summary of results: Physicians constructed student interaction as grounded in their personal and professional practice. Through the 'dailiness' of their practice, they built connection with students, for example by finding common grounds. Possible boundaries first had to be recognized and accepted, or even valued.

Conclusions: Through ongoing and developing dialogue, physicians constructed role development and even role reversal in their interaction with students.

Take-home messages: Recognizing both boundaries and opportunities in doing so may guide us in fostering fruitful physician-student dialogue.

6J/5
Evaluation of two methods of bedside teaching in medical program

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Background: There is often dissatisfaction among students with the delivery of bedside teaching, the major obstacle being availability of clinical tutors.

Summary of work: The aim of our study was to evaluate Sydney University medical students' satisfaction with two separate bedside teaching methods. In the "old, traditional" type a named tutor was formally allocated to a group and was "responsible" for all bedside teaching for that group. In the second "new" method - a protected clinical teaching time was chosen and opportunistic available clinicians would perform clinical bedside teaching for selected students'

groups. Questionnaires and a focus group data were collected assessing each method.

Summary of results: In the "new" method 100% of students had a bedside tutorial to attend every week compared with 20% in the old system; 70% of tutors had patients prepared every week compared with 25% in the old system; and 64% of students expressed no frustration with clinical bedside tutorials compared with 27% in the old system. All these differences were statistically significant.

Conclusions: The "new" approach resulted in an improved level of students' satisfaction, an increase in the number and range of patients seen and a reduction in the number of cancelled tutorials.

Take-home messages: Bedside teaching using protected clinical teaching time and opportunistic available clinicians has been perceived by students as superior to the traditional method of one allocated tutor per group.

6J/6
Do quality indicators for GP teaching practices predict good outcomes for students?

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Background: Keele medical students each spend 113 days learning in general practices over the MBChB course. During recruitment and review visits by faculty staff information is collected which is thought to indicate suitability as teaching practices and the quality of teaching. We aimed to explore the relationships between this routinely collected data and students' satisfaction with learning in general practices, the quality of the written feedback they received during workplace based assessments, and selected OSCE station scores.

Summary of work: We collated data on practices and student outcomes for students for a single academic year. We used Kendall's Tau to test the correlations both within practices and between practices.

Summary of results: The number of years teaching was positively correlated with the quality of the written feedback (t-test p=0.01). There was a significant negative correlation between the number of tutor development sessions attended by practice tutors and the students' total feedback scores (Kendall's Tau -0.33, p = 0.01) which was unexpected and counterintuitive.

Conclusions: The relationships between the quality indicators we collect for practices and outcomes for our students are not clear or easily understandable.

Take-home messages: Further work is needed to study the relationships between the variables in greater depth.

6J/7

Impact of the European Directive of the organization of working time on the learning experiences of clinical clerks at the University of Leuven

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Background: Since April 2011 the European Directive on the organization of working time has been implemented in the clerkship year at the University of Leuven. The Directive lays down minimum safety, health and working time requirements. We investigated whether a limitation in working hours made it more difficult for clerks to reach the final attainment goals.

Summary of work: After every rotation, a clinical clerk completes an online ACC-Questionnaire (Deketelaere, 2010) in which information on working time and learning experiences are questioned. Results before the implementation of the Directive (July-March) were compared with those after (April-July). In particular items referring to learning experiences were analyzed. Significance of possible differences was measured by a one-way ANOVA test (N=340, P=0,05).

Summary of results: Significant differences (P=0,007) were found with respect to the improvement of clinical reasoning, which was lower in the post-Directive group. The opportunity to reach the attainment levels showed no significant differences (P=>0,059).

Conclusions: The introduction of the European Directive does not affect the learning opportunities of clinical clerks. Further research on the effects of this Directive should be investigated.

Take-home messages: Since clerks seem to have less opportunity to improve their clinical reasoning, the University should focus more on this aspect of learning.

6K Short Communications: Best Evidence Medical Education

6K/1

A Best Evidence in Medical Education (BEME) Systematic Review: The effectiveness of team based learning (TBL) on learning outcomes in health professions education

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Background: Team based learning (TBL) is an innovative student-centred strategy that requires few faculty facilitators and focuses on knowledge application and teamwork. While TBL may have pedagogical value, individual studies present inconsistent findings. This systematic review aims to assess the effect of TBL on learning outcomes in health professions education.

Summary of work: After a comprehensive literature search, two reviewers completed title screening, full-text review and quality assessment of comparative studies in health professions settings. Qualitative synthesis was grouped by outcomes.

Summary of results: Fourteen of 330 identified titles were included (thirteen in undergraduates, one in postgraduates). Seven studies reported higher knowledge scores with TBL (p < 0.05), 4 reported no significant difference, and 3 reported improvement without comment on significance. One study reported higher learner reaction scores with TBL (p < 0.05), one reported higher scores with the comparator, 3 reported non-significant differences and 2 did not comment on significance.

Conclusions: This review demonstrates predominantly positive findings for the effects of TBL on knowledge outcomes. No studies showed detrimental effects on knowledge scores. Learner reaction was mixed. This may reflect the increased demands on learners in this student-centred application based teaching strategy.

Take-home messages: Despite general improvement in knowledge scores, there was mixed positive and negative learner reaction.

6K/2

The Effectiveness of the Use of Virtual Patients for Medical Students: A BEME Systematic Review in Progress

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Background: Virtual Patients (VP) are computer-based patient simulations used to educate and test medical knowledge and skills. VP are commonly used to teach clinical interviewing skills, bioethics, basic patient communication, history taking, clinical decision-making and reasoning skills.

Summary of work: We conducted a comprehensive search to retrieve all literature relating to the use of virtual patients in

undergraduate medical education from 1980 onwards. The role of virtual patients in assessment will be the focus of a separate review. Papers are being coded for the type of evaluation and quality, using a modified BEME coding sheet.

Summary of results: We imported the electronic search results into Endnote. In total, 1,890 references were retrieved in the searches. This number dropped to 1,311 references after the removal of duplicates. The hand search and contacting experts in the field is ongoing.

Conclusions: There are numerous arguments for including VP in the medical curriculum. Community and outpatient care with shorter hospital admissions has become the norm and exemplar cases are less readily available to medical trainees. VP augment clinical observation and enhance the breadth and consistency of the educational experience. Virtual Humans perform at least as well as Standardised Patients(SP) and provide a unique opportunity for training and assessment within the realm of SP encounters.

6K/3
A BEME review of longitudinal community and hospital placements in medical education: their nature, scope and effectiveness

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Background: Community/general practice attachments are a key component of undergraduate/graduate medical education in countries that have a strong tradition of primary health care. Such placements are typically four to eight weeks long. There are other models of such attachments in which students spend more than six months in a community practice setting. In countries with a large rural population base, such longitudinal attachments are commonly in rural centres. A USA survey of ' longitudinal integrated clinical clerkships' was carried out in 2009 with responses from 15 institutions that had active clerkships in place. These placements also included hospital ambulatory rotations of five months or longer. However there has been no systematic review of the effectiveness of these programs to date.

Summary of work: We are undertaking a BEME review of longitudinal clinical placements with the main aims of defining the nature and scope of such placements; exploring, analyzing and synthesizing the published evaluation data and ascertaining the factors associated with successful and unsuccessful attainment of learning outcomes by students.

Summary of results: Our preliminary results will be available for presentation based on our search of six databases and extraction of data using a BEME coding sheet.

Conclusions: This review will provide a narrative synthesis of the effectiveness of longitudinal placements and produce a definition of such placements for future research.

Take-home messages: In order to evaluate and compare educational interventions we need to agree definitions of common activities such as longitudinal placements.

6K/4
Challenges facing a systematic review of the contribution of theory to the development & delivery of effective interprofessional curricula in health professional education

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Background: Interprofessional education (IPE) is key to enhancing safe interprofessional collaborative practice. Theoretical frameworks that rationalise the development of IPE curricula are essential.

Summary of work: We review challenges to conducting a BEME systematic review of the *contribution of theory to the development of effective interprofessional curricula in health professional education.* This review has practical utility for curriculum developers, from all medical professions, who wish to design rigorous curricula that have strong theoretical underpinnings. It will assist them select and apply theories that are fit for purpose. Definitions of theory, curriculum and effectiveness that informed sample inclusion criteria of the review are presented alongside challenges related to defining theory quality and assessing the contribution of theory to education

Summary of results: Developing consensus on the meaning of theory, what constitutes theoretical quality and accurate recognition of when and where theory is being applied in studies with multiple outputs are some of these challenges.

Conclusions: Reviewing the contribution of theory to education adds complexity to an already challenging systematic review process.

Take home messages: Assign sufficient time early on in the review process to define, pilot and develop a consensus on the component concepts of the review question. Use the review to reflect on one's own academic writing practice.

6K/5

A Systematic Review of the Psychometric and Edumetric Properties of Assessment Tools for Communication and Consultation in Undergraduate Medicine

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Context: The importance of good communication in medical practice has been widely recognised by professional bodies in Europe and North America. In the undergraduate context direct observation of medical students with real and /or simulated patients is important for performance based assessment. Many instruments have been developed world-wide and their focus is usually on the training and assessment of generic communication skills.
Objectives: We developed a systematic review of assessment tools for the medical consultation to: Enable comparison in terms of their psychometric characteristics; Support an expansion of the classical concept of validity by incorporating an evaluation of edumetric approaches to assessment; Evaluate the suitability of assessment tools for both their selective and formative qualities, as the presence of the latter quality may enhance the potential of lifelong learning when the tool is being used. Distinguish between assessment tools directed at essential generic communication skills and those directed at wider consultation skills (i.e. complex skills applied to a specific professional context). Distinguish particular applicability for an undergraduate context.
Data sources: Electronic search of: ERIC, PubMed, Web of Science, , Embase, PsycINFO, ASSIA, CINAHL, British Education Index and the Cochrane Library and search on relevant topics in the field, such as 'education', 'communication' and 'training'. We have combined them to trace papers describing the psychometric and/ or edumetric qualities of relevant assessment tools from January 1960- January 2012.We have hand searched relevant journals (Academic Medicine, Medical Education, Medical Teacher, Patient Education and Counseling, etc.) and the reference sections of relevant articles found.
Study selection: We included studies involving medical undergraduate students, with communication assessment tools for consultations with both real and simulated patients. We included English, Dutch, German, French, Spanish and Scandinavian languages. Both quantitative and qualitative

studies were included, together with studies that describe the development, validation or use of assessment tools for medical communication in the consultation. Articles were excluded when they described: the construction of a tool which was not tested and validated in an educational context; tools only used for selection purposes; and tools used exclusively for postgraduate medical specialist training.
Data extraction: We developed a theoretically driven template by consensus according to the above aims, including required psychometric and edumetric criteria. All authors coded the first 100 references of the electronic search to reach agreement about inclusion and exclusion criteria, and to test the template. We each classified an equal section of the remaining database of references, disagreements were resolved by consensus in-country, and if this was not possible by discussion with a third author in another country. The template was amended on the basis of experience by consensus. The included papers were coded with the final developed template.
Results: A total of 5907 unique references were retrieved, the vast majority from PubMed and Embase. We will present our approach and current findings at this conference.

6K/6
Systematic reviews in medical education and clinical medicine – is there a difference?

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Background: It is accepted worldwide that clinical and educational decisions should be informed not by individual opinion but by the best available evidence. Aims: To examine the basis of educational evidence compared to clinical evidence and the different nature of the science behind each approach.
Summary of work: BEME Reviews in medical education and Cochrane Reviews in clinical medicine have been studied to identify similarities and differences between the two approaches.
Summary of results: The evidence to support clinical and educational decision making is different in its nature, as well as in its quality. However, the approach in both cases is similar in its fundamental steps (design a question, select evidence, critically appraise the quality of evidence, synthesize and apply the results). The differences between BEME and Cochrane systematic reviews are perhaps more a matter of degree, than the existence of fundamental differences.
Conclusions: In education as in clinical medicine, decision making should be supported by a hierarchy of evidence, but evidence alone is never sufficient for sound practice. The potential impact of research in practice is key to both BEME and Cochrane reviews.

6L Short Communications: Ethics

6L/1
A Novel Method of Ethics Education

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Background: King's College London has launched a pioneering project, by setting up a Student Clinical Ethics Committee (SCEC) which seeks to mirror hospital-based counterparts.
Summary of work: The SCEC meets monthly to discuss a case encountered in clinical practice. The student referrer, with agreement of the consultant caring for the patient, presents the (anonymised) case at the meeting. Contributors include the Chair, SCEC members and observers from a range of healthcare specialties. The dialogue adheres to a clear ethical framework seeking to cover a range of pertinent ethical issues. Case discussions are written up and posted on the university intranet/virtual campus.
Summary of results: Educational outcomes extend beyond the realm of theoretical learning. The SCEC provides a method of encouraging students to grapple with the complexity of cases experienced in a clinical setting. Students gain transferable life-skills and the process promotes communication and listening skills within a multidisciplinary framework. SCEC has received extremely positive feedback from all stakeholders.
Conclusions: Through its dynamic and inclusive approach, the SCEC has the potential to play an important role in ethics teaching for healthcare students.
Take-home messages: Interactive case-based teaching of ethics, through methods such as SCEC, enables students to learn and retain a wide range of skills applicable for their future clinical practice.

6L/2
Integrating ethics and law with clinical teaching

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Background: The UK's Institute of Medical Ethics recommends that ethics and law teaching is "thoroughly integrated both vertically and horizontally throughout the curricula of all medical schools". Challenges to providing integrated teaching include available teaching expertise, curriculum overload and ownership of material.
Summary of work: We have designed an integrated case-based teaching session in the women's health module of the MBBS course. As well as clinical teaching on emergency contraception, the session covers the ethical and legal aspects of respecting and supporting patient autonomy and decision-making in challenging circumstances.
Summary of results: Student evaluation was positive. Students found it useful to ground thinking about ethical challenges in a clinical scenario that also required clinical knowledge and clinical reasoning skills. Students requested more integrated ethics and law teaching.
Conclusions: An integrated teaching session like this provides a valuable opportunity to teach ethics and law in a way that reflects the realities of clinical practice. Medical students highly value teaching which covers varied aspects of clinical practice.
Take-home messages: Integrating ethics and law teaching with clinical teaching provides a feasible, effective and popular means of preparing medical students for the realities of practice. It is well worth overcoming the challenges in order to provide such teaching sessions.

6L/3
Tutors as agents to promote ethical clinical education at Tel Aviv University Medical School (TAUMED)

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Background: Lately, TAUMED has been requiring a trained tutor in each ward to be in-charge for ethical- social-cultural education. The students' group-discussions allow an integration of these aspects with "their" patient's medical issues. The questions: • Is there a relationship between tutor-group discussions and students' satisfaction from their clinical instruction? • To what extent do students' discussions influence the ward's "ethical environment"?
Summary of work: A survey on ethical environment in the ward as well as satisfaction from the clinical training was run among students from TAUMED in2009.A total of 138 students responded (88%) who were trained in 21 internal-medicine wards.
Summary of results: Frequent special tutor-students discussions correlated positively and significantly with higher levels of ethical behavior in the wards. We also found the group discussions to be significantly correlated to students' satisfaction with their clinical instruction.
Conclusions: The paper highlights the role of tutors' involvement in developing ethical sensitivities of students. This involvement in turn affects the ward's ethical culture and student satisfaction.

Take-home messages: It "pays off" to allocate resources of faculty, especially tutors' time and efforts to strengthen students' positive ethical experience and satisfaction.

6L/4
Telling the truth: medical students' progress with an ethical skill

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Background: Truth-telling is a complex skill, requiring multiple abilities of communication, understanding, and empathy.
Summary of work: We assessed the effects of a teaching intervention on students' ethical attitudes towards truth-telling and on their self-reported competence and comfort in breaking bad news.
Two cohorts of medical students (n 225) participated in a standardized patient (SP)-based seminar integrating ethical and communication skills into teaching the delivery of bad news. They answered a questionnaire one week before the teaching intervention, one month later, and 2 years later during clerkship.
Summary of results: Ethical attitudes towards breaking bad news remained stable across time. In general, students self-assessed as more competent and more comfortable after the teaching intervention with SP. A closer analysis revealed that students that self-reported as not competent (mean 1.72) increased significantly their feeling of competence after having been trained (2.50). Students who self-reported as competent (mean 4.14) before the intervention changed their meaning after the intervention and declared being in fact less competent than previously thought (2.43).
Conclusions: A SP-based seminar helped to avoid the decrease of ethical attitudes observed in other studies and increased competence and comfort in breaking bad news.
Take-home messages: Experiential training approach seems to benefit medical students in maintaining ethical skills and developing competence and awareness in delivering bad news.

6L/5
Comparison of nonverbal behavior between disclosure of adverse events and medical interview among medical students

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Background: We developed disclosure training of adverse events with simulated patients (SPs). The disclosure training is as follows. The students perform healthcare professionals in charge and the SPs play the patient's family. Both students and SPs were informed of the setting of medical care and hypothetical scenarios. Only students were presented with adverse events with/without errors. Students have to explain the incidents to the SPs.
Summary of work: We recorded 8 disclosure trainings and 8 medical interviews of 4th grade medical students with SPs on video. In the case of disclosure analysis, 4 students exercised twice. Medical interviews were conducted as initial visit at outpatient setting. An observer watched the videos and annotated durations of utterance, watching SP's face, and nodding. The number and the time of durations per 60 sec were measured from annotation results. We compared these features between disclosure and interview.
Summary of results: All of the average of numbers and the times during disclosure are greater than during interview. Especially the number of watching SP's face has significant difference, because students often turn their eyes off and on when they talking to SPs.
Conclusions: In disclosure setting, students have tendencies to communicate closer than interview. From the results of questionnaires, we found a relationship between feeling bewildered and watching SP's face. This feeling bewildered may be caused increase of the number of watching SP's face.
Take-home messages: The training of disclosure of adverse events causes bewilderment, and this is an occasion for stimulating the medical students regarding patient safety.

6L/6
Preparing medical students for ethical practice: an examination of the effectiveness of a personal and professional development theme in one medical school

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Background: Professionalism theme in the curriculum should be provided in all stages of medical education and starts with the recognition of a cognitive base which must be taught explicitly. What professionalism is and how it will be taught and assessed should be clearly stated in each medical school. It is also important to examine the personal and professional development theme in the curriculum for make it better in the future.

Summary of work: This is an in-depth examination of professionalism theme in medical school curriculum and a the type of the research is a mixed method research. A detailed literature review, questionnaires, semi structured interviews, and focus groups will be performed. The subjects of the research are medical students, interns, leaders of the faculty, and faculty staff.

Summary of results: This is an ongoing research. The results will soon be available.

Conclusions: The conclusions will soon be available depend on the results.

Take-home messages: 1. Professionalism theme should be determined precisely in a medical school curriculum.

2. Despite the variation in defining professionalism, one medical school should meet an agreement on teaching and learning professionalism for prepare graduates in better ethical practice and for serving the society.

3. Research in medical education is important for laying the groundwork for a better construction of professionalism theme in the curriculum.

6L/7
Case finding: Assessing the ability of medical students to identify and analyze ethical and professional problems at the bedside

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Background: Teaching clinical ethics and professionalism is a major challenge in medical education. Objective: Determine whether medical students can detect and apply basic ethical concepts at the bedside.

Summary of work: After 8 weeks on their first rotation in medicine students were required to submit description of an encounter with an ethical/professional dilemma, address conflicting principles, suggest a means of resolving the issue. Each student presented the case and received written feedback.

Summary of results: Between 2000- 2011 640 cases were submitted. 256 students (40%) submitted an ethical dilemma: autonomy, informed consent, withdrawing/withholding life support, end of life (DNR, advance directives), surrogate/caregiver/ family interactions, resource allocation, ageism, decision making capacity, futility etc. 224 students (35%) selected a professional problem: truth-telling, confidentiality, paternalism,disrespect for patients, whistle-blowing etc. 160 students emphasized problematic issues specific to medical students: terms of introduction, disclosure of information, power of the white coat, presumed consent, learning skills (blood drawing), intimate physical examination etc. The cases represented a wide array of conflicting issues and demonstrated insight, reflection and observational skills.

Conclusions: Conclusions: Case finding is a useful approach to assess the ability of students to apply bioethical concepts at the bedside. It promotes empathy, awareness and maturity at a crucial stage in the professional development.

6M Short Communications: eLearning Case Studies

6M/1
Comparing nurses to doctors using simulated scenarios in evaluating dyspneic patients at triage in an emergency department: an exploratory study

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Background: Little is known regarding the agreement between nurses and doctors in triaging dyspneic patients in the emergency department (ED). We aimed to compare the effectiveness of appropriately trained/ accreditated ED nurses with doctors in the evaluation of dyspneic patients at triage using a simulator.

Summary of work: We compared eight nurses who underwent a structured bedside training/accreditation program with eight doctors. Two assessors evaluated them through seven clinically relevant cadiorespiratory simulated scenarios. Each scenario had an evaluation instrument that scored participants on assessment and triage management. Each nurse was also surveyed over a six-point Likert scale (0 to 5) on their confidence in triaging dyspneic patients. Data was analyzed using descriptive statistics with statistical significance set at p <0.05.

Summary of results: There were no statistically significant differences between the mean assessment or management scores across all scenarios between doctors versus nurses (p values: 0.070 to 0.798). Six nurses felt they could evaluate ED dyspneic patients alone (score of 4) and the remainder with supervision (score of 2-3).

Conclusions: Trained ED nurses; when compared to doctors; could triage dyspneic patients effectively on a simulator.

Take-home messages: Our program could serve as a training and assessment tool for nurses making complex and critical triage decisions on the dyspneic patient.

6M/2
Clinical placements in a telesupervision model: Student and educator views

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Background: Telesupervision, using an established telehealth system, has potential to increase capacity for work-based learning in rural and regional placements. This study aimed to determine student and clinical educator views on placement experiences provided within a telesupervision model.

Summary of work: Students from physiotherapy and speech pathology (n=4) were remotely supervised for 1 session per week using eHAB®, a videoconferencing system, while on placement in a regional town in Queensland, Australia. Two on-site and two remote clinical educators shared the student supervision. All participants were interviewed following the placements to seek their views on the delivery of telesupervision. Interviews were transcribed verbatim and inductive content analysis was undertaken to establish themes.

Summary of results: Themes identified in this study included the user-friendliness, comfort and accessibility of the eHAB® equipment, connectivity issues, acceptance of the modality by all participants and patients, and the need for additional communication between remote and on site supervisors.

Conclusions: Participants reported that telesupervision had potential for expansion of student placements and increased support for graduates in rural and remote areas. Improvements in the applications of eHAB® were suggested.

Take-home messages: Telesupervision is accepted by students, clinical educators and patients. Communication between on site and remote educators is essential to facilitate student learning.

6M/3
New teaching model in dental education

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Background: This research explores the use of a blended course design to address the needs of working adult learners in an highly specialised dental program course that require a strong coordination between theoretical and practical activities.

Through lessons on theory and hands-on participation activities the Masters course aims to help the participants acquire specific proficiency and clinical experience in laser wavelengths principally used in dentistry. The program combines face-to-face seminars, theoretical teaching, and live operations on patients performed by participants under the guidance and supervision of teachers. In addition to a traditional classroom learning situation, there are audio/video recordings of the lessons available for online access.

Summary of work: The purpose of this descriptive study was to examine the perceptions of faculty and students utilizing a hybrid course design.

Summary of results: A sample of 30 students and 14 faculty members were surveyed to determine their perceptions of the hybrid course design. The survey addressed four primary areas including course design and content, interaction/collaboration, assessment, and overall learner and faculty perceptions.

Conclusions: The results of the study show that, as a whole, faculty and students perceive the blended course design is an effective means of delivering the highly specialised course content.

Take-home messages: Findings from this study would be useful for those who teach or those who are considering teaching highly specialised medical courses utilizing a hybrid course design.

6M/4
A blended approach to skills and resuscitation training - e-learning and face to face teaching

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Background: Clinical and Resuscitation skills are delivered throughout the five years of the Edinburgh Undergraduate MBChB programme. "Tomorrow's Doctors" states, the graduating medical student "must be properly prepared for clinical practice" and must be able to demonstrate competence in an increased number of clinical and resuscitation skills. These new skills required implementation; however no additional teaching time has been made available.

Summary of work: For the millennial undergraduate generation, the virtual environment is one with which they naturally engage. The Virtual Learning Environment (VLE) is user friendly and can provide a consistent approach to teaching. We wanted to find creative ways to introduce new skills and knowledge to help prepare each student for their sessions. Computer Assisted Learning (CAL) packages for resuscitation, vital signs and nutrition were developed to support new and existing skills, providing information, rationale and video demonstration.

Summary of results: Evaluation data was collected from students as to the usefulness of each CAL.

Conclusions: Feedback from the students suggests that the CAL has empowered them to move from being passive collectors of knowledge to taking responsibility for their learning. They feel better prepared and have more time for practice within sessions.

Take-home messages: CAL packages: • provide a successful integrated blended learning approach to skills teaching when coupled with face to face teaching; • prepare students to

engage more with skills teaching sessions; • act as a useful and effective revision tool.

6M/5
E-debates - developing an interactive educational virtual learning network within Maternity

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Background: A Maternity unit provides a rich environment for learning. Challenges to delivering safe, timely training include service pressure, patient turnover and shiftwork. Sound educational principles support using computer-mediated communication to reinforce adult learning (1). We explored how to offer a a virtual learning café which promoted reflective practice and critical evaluation skills.
Summary of work: Multi-disciplinary e-debates ran monthly from May to December 2011. Each provided a clinical dilemma for discussion design mapped to RCOA curriculum learning outcomes. Participants responded asynchronously via e-mail. Round-up included the discussion summary, facilitating Consultants' learning points, and directions to relevant national guidelines and literature. A questionnaire explored levels of participation and topic perceptions.
Summary of results: n=91: 8 Consultants, 83 trainees. The survey demonstrated educational usefulness of this mode of learning. Comments included: 'diverse and relevant', 'things I had not considered' and 'even..just following...there were good learning tips'. Participants indicated self-reflection, deeper thinking and utilization of further reading material.
Conclusions: Time and finance for education is at a premium. We optimised learning despite these constraints. 'Modelled' participation(2) and ensuring participants' social presence (3) were key.
Take-home messages: Technology can help us to develop the value of 'networked expertise' in an innovative way.

6M/6
Students' self-regulated learning in clinical rotation: the difference between traditional classroom and online context

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Background: Self-regulation has been recognized as a crucial factor for success in online learning. This study aimed to compare students' perceived self-regulation between traditional lectures and online learning complemented to the clinical rotations in clerkship.
Summary of work: 211 fifth-year medical students attended clinical rotations and experienced both complementary learning contexts of "traditional classroom" and "online learning" respectively. Every student answered the self-regulation questionnaire originated from Motivated Strategies for Learning Questionnaire with 6 factors including self-efficacy, goal-setting, time-management, self-evaluation, help-seeking and learning-strategy use for both learning contexts.
Summary of results: The results of exploratory factor analysis were consistent in both learning contexts with the same overall alpha of 0.96. However, two pairs of the six factors were merged (i.e. goal-setting and time-management, self-evaluation and help-seeking). The repeated measure one-way ANOVA revealed that the online learning is significantly better than traditional classroom in "goal-setting and time-management." By examining the mean scores across factors, the factor of "self-evaluation and help-seeking" is significantly higher than other factors in both learning contexts.
Conclusions: Online learning promotes students' self-regulation in goal-setting and time-management. Medical students have high awareness of monitoring learning and seeking help.
Take-home messages: Self-regulation may be enhanced or at least remained when shifting the curriculum from traditional classroom to online learning.

6M/7
The effects of contextual and interactive learning in online environment on knowledge retention among medical students

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Background: The majority of medical students are often unable to make connections between what they are learning and how knowledge of basic sciences will be used in clinical settings. Using clinical vignettes and appropriate pedagogical strategies in online environment may improve knowledge retention. The aim of this study is to compare the knowledge retention between second year students who attended blended (n=35) and traditional (n=34) course on histology, 9 months after they passed exam.

Summary of work: Both groups took examination, which was made of 30 multiple choice questions – 15 of them were presented in the form of clinical vignettes. Also, students who attended the blended course were divided into three categories: low, moderately and very active in online course.

Summary of results: The average point in the experimental group was 15.74 ± 4.96, while the average point in the control group was 13.34 ± 4.13. Analysing the questions in the form of clinical vignettes, the experimental group achieved an average score of 7.2 ± 2.54, while students in the control group achieved 6.12 ± 1.92. Statistically significant differences (p<0.05) were found in both parameters. The average points scored among very active students is 19.1± 4.64, which represents a very high statistical significance (p<0.01) compared to moderately (14.6± 3.70) and low active students (11.3± 3.28).

Conclusions: The results have shown greater effectiveness of contextual learning in online environment.

Take-home messages: Contextual learning by using clinical cases in online environment may improve knowledge retention and desired learning outcomes.

6N Workshop: Advocacy in Action: Cultivating the Next Generation of Socially Accountable Physicians

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Background: Social accountability is an essential element of medical professionalism and physician identity, yet medical education still grapples with this concept. As a core element of social accountability, advocacy training empowers physicians to address social determinants of health in individual patient encounters and through advancing systematic change.

Intended outcomes: Participants will be able to: (1) define socially accountable medical education; (2) explain how systematic approaches to the practice of advocacy can enhance socially accountable health care; (3) identify the three core components of the advocacy cycle; (4) develop innovative advocacy and social accountability training which focuses on outcome-based competency.

Structure: This highly interactive workshop seeks to define a core advocacy skill set and develop strategies for effectively integrating advocacy into medical education with a particular emphasis on the development of longitudinal and experiential learning. This workshop will start and end with brief learning climate activities that relate to personal experiences with advocacy. There will be very brief didactics ensure all participants are sharing common language related

to this often ill-defined issue. The bulk of the workshop will be completed in small groups to synthesize how the components of an "advocacy cycle" culminate in comprehensive health advocacy campaigns and to allow for sharing of advocacy teaching innovations happening at local institutions.

Who should attend: This workshop will be of value to medical educators interested in preparing physicians-in-training to provide socially accountable health care and participate in advocacy as a professional responsibility.

Level of workshop: Beginner.

6O Workshop: Working with dissensus – an important tool for Values-based practice

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Background: Sound clinical decisions are usually both evidence-based and values-based, ensuring that the best available evidence is 'judiciously applied to the circumstances of the individual patient'. The process of evidence-basing is one on which trained clinicians can usually achieve consensus: debating the conclusions of the published literature to reach broad consensus on the 'best available evidence'. Differences of values sometimes need to be resolved by consensus (as in the development of shared frameworks of values). At other times we need to agree to disagree about values. Dissensus involves differences of values remaining in play to be balanced sometimes one way and sometimes in other ways according to the particular circumstances presented by different situations.

Intended outcomes: Participants will learn the skills of ascertaining the values at play in an individual consultation, and the processes of dissensus, as well as how to teach this important part of values-based practice.

Structure: Following a brief introduction to values-based practice, we will work with some prepared examples of clinical consultations and with examples from practice recalled by clinicians who attend the workshop, moving step-by-step through the relevant V-BP processes, and learning how to teach them.

Who should attend: Clinical educators and teachers involved in communication skills teaching and all who are interested in professionalism.

Level of workshop: Advanced.

6P Workshop: Informed self-assessment and performance feedback: Translating research into enhanced teaching and learning

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Background: Self-assessment is a foundational professional competency yet evidence shows that without external feedback, it is frequently flawed. The concept of "informed self-assessment" has emerged, described as a set of activities through which individuals use both external and internal data to assess how they are doing. Performance feedback is essential and multiple factors influence its acceptance and use.

Intended outcomes: Building on research findings, the workshop will explore educational strategies to enhance the acceptance and use of external performance feedback. Participants will be able to: 1. Discuss an evidence-based model for understanding informed self-assessment 2. Discuss the conditions and approaches that can facilitate informed self-assessment and use of external feedback. 3. Apply these conditions and approaches to practical examples from their own teaching experiences. 4. Identify and develop practical educational strategies to enhance informed self-assessment and feedback adoption, across the education continuum.

Structure: This is an interactive workshop using varied activities: using research quotations to stimulate discussion of own experiences in dyads, brief research presentation, applying the model of informed self-assessment and feedback in small groups, small group development and presentation of educational strategies.

Who should attend: Educators, clinicians, students, residents, researchers.

Level of workshop: Intermediate.

6Q Workshop: Professional behaviour: "I know it when I see it"

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Background: The General Medical Council (GMC) and many other national and international governing bodies are attempting to clearly define professionalism. This is difficult and may be subject to interpretation however professionalism (and unprofessionalism) is perhaps easier to recognise. Increasing expectations for professional behaviour from doctors in training (including medical students) by external (GMC) and internal regulators (medical schools) make it imperative that students have a clear understanding of the behaviours expected of them and the consequences which will befall them should they breach expected standards.

Intended outcomes: • Introduction to a novel approach of teaching standards of professionalism • Raising awareness of new challenges to professionalism presented by technologies e.g. social networking sites• Unique opportunity to develop consistency in professional standards internationally.

Structure: After a 10 minute introduction participants will be presented with a series of scenarios presenting behaviours which may (or may not) cause concern regarding standards of professionalism. Using personal response handsets they will be asked to make an initial judgement. The audience will then identify key points in the scenario. After a period of discussion the vote will be repeated. The audience will then be told the presenters' opinion and what our students thought.

Who should attend: All interested in developing high standards of professionalism in medicine from students to professors.

Level of workshop: Intermediate.

6R Workshop: Making Medical Podcasts for the Millennial Generation – developing and implementing a new educational technology into the curriculum

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Background: Podcasts are a well established component of Web 2.0 technologies and our current generation of undergraduate and postgraduate students; the "Millennial Generation" is conversant with their use in entertainment and lifestyle. Podcasts in medical education are growing exponentially, driven not only by the simplicity of technology running them but also by the demands of our current students to provide educational resources that fit with their current life experience.

Intended outcomes: Participants will understand the process of implementing podcasts into the curriculum from initial development to evaluation and consider a potential framework for the implementation of new e-learning technologies into the curriculum.

Structure: Short presentations on aspects of the implementation process including conception, development, production and evaluation and a presentation on 'The Glasgow Experience'; Small group discussions facilitated by presenters on each of the above aspects to share experience and points of good practice with the aim of creating a potential framework for the implementation of new e-learning technologies into the curriculum.

TUESDAY 28 AUGUST 2012

Who should attend: Those who are considering or are implementing a new e-learning technology into the curriculum and those who are interested in the educational use of podcasts within the medical curriculum.
Level of workshop: Beginner.

6S Workshop: International Standards for Medical Student Electives

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Tony Redmond, University of Manchester, School of Medicine, Manchester, United Kingdom

Background: There is considerable variability in how western medical schools use a student 'elective experience' in low resource countries to assist in developing global citizenship. There is evidence that a safe, ethical and educational elective experience is more likely to occur when the parent university provides: a) a pre-departure preparation program, b) in country support, and c) post-return debriefing activities and has transparent, sustainable and relationships between parent and host organisations. How a medical school uses an elective program to transform the curriculum towards a global perspective may also be important. There is a need for international standards to inform all medical schools of best practice in the use of the elective experience in a low resource country, to achieve minimum risk to the parent and maximum benefit to host institutions.
Intended outcomes: Opportunity for all participants to debate and determine the key issues involved in elective programs and to contribute to the development of an initial draft of international standards.
Structure: This workshop will: a) outline a process to achieve consensus amongst key stakeholders towards international standards using a Delphi approach, and b) brainstorm and categorise the key issues to form the basic structure of the standards. Further refinement of the standards will then occur by a wiki months, with the final consensus will be reported at the 2013 AMEE Conference.
Who Should Attend: Academics and other stakeholders involved in medical student elective programs or those interested in global health.
Level of workshop: Advanced.

6T Workshop: Towards Global Standards for PhD Programmes in Medical Education

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David Gordon, University of Copenhagen, World Federation for Medical Education and AMSE, Copenhagen, Denmark

Stefan Lindgren, University of Lund, Department of Gastroenterology, University Hospital MAS, Malmö 205 02, Sweden, Stefan.Lindgren@med.lu.se

Background: The Organization for PhD Education in Biomedicine and Health Sciences in the European System (ORPHEUS), Association of Medical Schools in Europe (AMSE), and World Federation for Medical Education (WFME) have recently published "Standards for PhD Education in Biomedicine and Health Sciences in Europe" (Aarhus University Press, 2012, ISBN9788779346000). These are based on ORPHEUS meetings since 2004 and provide a specific framework for ensuring the quality of PhD programmes, particularly in medicine. The standards are constructed to be applicable on a global scale. The workshop will have speakers from, respectively, United States, Far East, South America and Africa to discuss how PhD programmes comply with the ORPHEUS/AMSE/WFME standards in a global context.
Intended outcomes: The workshop will form the basis for consideration of a process leading to global standards for PhD education in medical education. The results will be taken further at the WFME World Conference, Lund, November 2012 (www.wfme.org).
Structure: 10-min introduction by facilitators (the abstract authors); four 10-min presentations from invited participants; 30-min brainstorming session on the proposed standards (small groups under the facilitators); 25-min plenary session and conclusion. The workshop will include a feedback questionnaire.
Who should attend: Those involved in medical PhD programmes from all countries in the World.
Level of workshop: Intermediate.

6U Workshop: Quality management in postgraduate education: "a Dutch treat"

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Background: Quality management aims to improve postgraduate education with respect to outcome of education and satisfaction of residents. It has the attention of governmental authorities, administrators, program directors, clinical teachers, residents and students as future applicants. Postgraduate education commitment to quality management has remarkably increased in the Netherlands, concomitantly with recent reforms.
Intended outcomes: Participants will get acquainted with a practical and systematic approach to designing a quality improvement system. They will understand aspects that need attention and choices to be made. Participants will be

equipped with some practical tools for quality measurement to take home.

Structure: The quality management system of UMC Utrecht is demonstrated as an example. Measuring instruments will be discussed and appraised. Different perspectives will be illustrated, with focus on residents and clinical teachers. Results of relevant research will be briefly reviewed. Participants will be invited to comment from their own national and cultural perspectives and professional backgrounds. Secondly, participants practice the interpretation of measurement results and their translation into action plans in order to appreciate opportunities for educational practice.

Who should attend: Program directors, medical educators and others responsible for or interested in the design and implementation of quality improvement systems, especially in postgraduate medical education.

Level of workshop: Intermediate.

6V Meeting: AMEE Simulation Committee (closed session)

6W Posters: The Teacher and Evaluation of the Teacher

6W/1
Teaching Styles in Operative Surgery: a new model for trainees to appreciate trainer styles

Charlotte Hitchins (*Ashford & St Peter's Hospitals, General Surgery, Chertsey, United Kingdom*)
Humphrey Scott (*Ashford & St Peter's Hospitals; School of Surgery, Kent Surrey & Sussex Deanery, General Surgery, Chertsey, United Kingdom*)

(*Presenter:* Charlotte Hitchins, Ashford & St Peter's Hospitals, General Surgery, Guildford Road, Chertsey KT16 0PZ, United Kingdom, charlotte.hitchins@nhs.net)

Background: All doctors are required to train their juniors. Within European Working Time Directive constraints effective delivery of teaching is essential. There has been considerable research into learning styles in surgery, but very little focus on teaching styles. We describe a new model of teaching styles in operative surgery.

Summary of work: The literature was reviewed. A new model of surgical teaching styles was developed through observation of consultant trainers with their trainees. Comparisons were made with existing learning and teaching theory.

Summary of results: Observations were grouped into four trainer styles: a) Learn by assisting/observation; b) Learn by doing – parts; c) Learn by doing – instructed; d) Learn by doing – help when required.

Conclusions: As the trainees' experience increases the ideal trainer should move from style "a" to "d". As this happens the trainer spends less time doing the operation and more time observing and critiquing. There may be continuity between these groups / styles and the ideal trainer should be able to move between them dependent on the trainee's needs.

Take-home messages: We propose a new model to describe surgical teaching styles. Trainees and trainers must be adaptable to these styles to optimise operative training opportunities.

6W/2
Competition – a Way to Promote Innovation in Education

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Background: Resistance to change is one of the biggest obstacles for curriculum planners in implementing an innovative curriculum. Up to date there is no or only little culture in medical education to initiate innovation by competition. In 2010 the Austrian ministry of Science and Research gave a grant, which was used for innovation in education by competition.

Summary of work: A didactic concept for clinical skills acquisition was developed. A frame of minimal requirements of a good teaching unit was defined. A transparent procedure for the call and the selection of winners in a two step selection procedure were established.

Summary of results: There were 13 applications for the first call, eight for the second. Twelve of them met the formal criteria, and eight passed the review board for didactic criteria. Six of them are new ready to be implemented in the core curriculum.

Conclusions: A didactic concept could be realized by competition. For the first time at this university teachers got a twofold reward for developing a teaching unit consisting of a financial support and additionally the honor of succeeding in a competition.

Take-home messages: In times of financial cut-back competition can be a transparent and motivating way to promote innovation in medical education.

6W/3
Medical Students' Opinion about Clinical Teacher's Role – A Transcultural Study

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Fernanda Vincia Sidequersky (*Medical School of Ribeirao Preto - USP and Facoltà di Medicina i Chirurgia - Universita degli Studi di Milano, Ophthalmology, Otorhinolaringology and Head and Neck Surgery and Morfologia Umana, Ribeirao Preto - SP, Brazil and Milano, Italy, Brazil*)
Chiarella Sforza (*Facoltà di Medicina i Chirurgia - Universita degli Studi di Milano, Morfologia Umana, Milano, Italy*)

Carlos E Piccinato (*Medical School of Ribeirao Preto, Surgery and Anatomia, Ribeirao Preto - SP, Brazil*)
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Claudia M de Felicio (*Medical School of Ribeirao Preto - USP, Ophthalmology, Otorhinolaringology and Head and Neck Surgery, Ribeirao Preto - SP, Brazil*)

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Background: Socio-cultural factors may influence student view about teacher's activities. We aimed at determining the opinions of Italian and Brazilian medical students about the importance of the different roles of clinical teachers.
Summary of work: Students from both the University of Milan, Italy (N=40) and the University of Sao Paulo (Ribeirao Preto), Brazil (N=28), were invited to rate the importance attributed to activities characteristic of the clinical teacher work. In both medical schools, full-time faculty work is the rule.
Summary of results: Both groups agreed about the importance of activities related to research and teaching, which had the higher scores. Brazilian students also valued teacher's engagement in medical school life. Significant differences were detected in the following aspects of faculty work, which were valued more in Brazil: role modeling (p=0.00001); program evaluation (p=0.006); student assessment (p=0.02); production of teaching material (p=0.01) and institutional administration (p=0.047). Italian students attributed more value to the skills of the teacher, as a physician (p=0.006).
Conclusions: Teaching and research were the activities most valued by both Italian and Brazilian students. Brazilian students value more academic activities, whereas Italian students value more medical expertise.
Take-home messages: Medical students from different countries have different perspective on clinical teacher's roles, although agreeing on the value of core activities.

6W/4
Characteristics of physicians engaging in basic science: A questionnaire survey focusing on physicians in basic science departments in Juntendo University School of Medicine in Tokyo

Yuka Yamazaki (*Juntendo University School of Medicine, Public Health, Tokyo, Japan*)

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Background: The number of medical students who enter Basic Science is decreasing in Japan. This prompted the government to increase the quorum of medical students who enter Basic Science. We conducted a survey on physicians in Basic Science to grasp their characteristics, and to investigate their appeals to medical students.

Summary of work: Self-administered questionnaires were distributed to 30 physicians engaged in Basic Science in Juntendo University School of Medicine in Tokyo. Question items were career recommendation, obstacle factors for students, efforts to inspire students, and so on. Using X2 tests, we examined the correlations between each variable.
Summary of results: The response rate was 87%. Approximately 60% of the respondents recommended Basic Science. Two main obstacle factors were low salary and their hope to become a clinician. X2 tests showed that young female physicians tended to enter Basic Science (p<0.05), and consider themselves to be making efforts to inspire students (p<0.05). Furthermore, physicians who entered Basic Science earlier tended to wish for more lectures concerning research for students (p<0.05).
Conclusions: Promoting young and female physicians and improving salary or scholarship may be a key to secure talent for Basic Science.
Take-home messages: Young female physicians may save Basic Science. We should re-examine salary of Basic Scientist.

6W/5
Students' evaluation of clinical attending physician teaching effectiveness based on a cognitive apprenticeship model

Mitra Amini (*Shiraz University of Medical Sciences, Education Development and Research Center, Shiraz, Iran*)

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Background: The most important mission of university is educating and training of students who will become future experts and managers of the country. Hence, promotion in educational level of the Universities of Medical Sciences will lead to training of efficient health professionals which in turn improves health in society. This promotion will not emerge unless there is effective feedback, constant surveillance and improvement of defects. In this regard we tried to assess, according to cognitive apprenticeship model in education, all attending physicians in all educative wards of the Shahid Faghihi Hospital of Shiraz. Giving practical feedback, we tried to improve the quality of education in the Shiraz University of Medical Sciences.
Summary of work: In this research, attending physicians who were practicing in the internal medicine, gynecology, dermatology, surgery, cardiology, neurology and urology wards were evaluated. In this survey, we used a reliable and valid questionnaire. Six variables including modeling, coaching, scaffolding, articulation, reflection, and exploration were assessed. Collected data were interpreted with SPSS16 program.
Summary of results: From students' view, the most important characteristics of the attending physician who earned the highest score was exploration, scaffolding, and coaching. Also, in the study, the students noted that the majority of the evaluated wards need to improve their motivational aspect.
Conclusions: Surveillance and feedback is one of the most efficient methods for improvement in the quality of

education. Using suitable surveillance methods, one can improve education in the Universities of Medical Sciences.
Take-home messages: This model is a good method for evaluation clinical faculties.

6W/6
Professional development for Health Science educators, using self-reflection in a Canadian medical radiation science programme

Renata Lumsden (*Mohawk-McMaster Institute for Applied Health Science, Mohawk College, Health Science, Hamilton, Canada*)
Susie Schofield (*University of Dundee, Centre for Medical Education, Dundee, United Kingdom*)

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Background: The medical radiation science collaborative program at Mohawk-McMaster (MoMac), Canada, includes self-reflection as part of faculty professional development.
Summary of work: Use of a qualitative method to improve awareness of perceived teaching effectiveness pertaining to lecture, enhance performance and encourage effective teaching in medical radiation science using self-reflection. Use of self-reflection to enhance lecture teaching within faculty specialization, overall and by gender.
Summary of results: The paper-based reflective practice lecture self-evaluation was administered during the period of September 14, 2009 to October 9, 2009, to faculty from three medical radiation specializations: ultrasound, therapy and radiography. With a 100% response rate, overall comments were favourable in terms of an excellent self-evaluative tool to enhance teaching. No significant difference was found overall, between gender and specialization.
Conclusions: The reflective practice lecture training tool can be used effectively to develop successful lecture skills and strategies, generate positive reactions, increase confidence and generate more reflection and thinking about teaching.
Take-home messages: A good teacher reflects on his or her own teaching and has an insight into their teaching practice and the options available. In the hands of the most effective teachers, the lecture for example, becomes a way to clarify and simplify complex material while engaging important and challenging questions, or to inspire attention, to provoke, to focus. Although many medical schools have been through profound changes in curriculum design and delivery, the traditional lecture still remains as one of the most widely used instructional methods in medical education.

6W/7
Assessment of Teaching Performance in Residency Programs at UNAM Faculty of Medicine in Mexico

Adrián Martínez-González (*UNAM, Public Health, Mexico*)
Melchor Sánchez Mendiola (*UNAM, Medical Education Secretariat, Mexico*)

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Background: A clinician is not necessarily a good teacher by virtue of disciplinary expertise, because other functions and duties are needed. The objective of this paper was to assess teaching performance by residents' opinion at "Dr. Manuel Gea González" Hospital in Mexico City.
Summary of work: The study population were UNAM Faculty of Medicine residency program professors in the mentioned Hospital. The anonymous questionnaire to assess teaching performance by residents' opinion has evidence of validity and reliability and is composed of 5 dimensions using a Likert scale.
Summary of results: 25 Teachers from thirteen specialties were evaluated by 281 residents who stated that teaching performance is acceptable, with an average of 4.25 for Medical courses, and excellent with an average of 4.70 for the Surgical courses. The best valued dimension was "knowledge of the course" with an average of 4.32 in contrast to the "assessment" dimension with 3.84.
Conclusions: Teaching performance by residents' opinion was acceptable. Different degrees of teaching performance were found that ranged from sufficient to excellent. The surgical specialties were more highly rated than the medical.
Take-home messages: Assessment teaching competencies can show different degrees of performance and that are required to enhance the educational process.

6W/8
Clinical faculty evaluations by residents in the Faculty of Medicine: A new instrument

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Asoka Samarasena (*Memorial University of Newfoundland, Medicine, St. John's, Canada*)
Jacinta Reddigan (*Memorial University of Newfoundland, Medicine, St. John's, Canada*)
Stephen Shorlin (*Memorial University of Newfoundland, Medicine, St. John's, Canada*)
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Background: In 2011, the Faculty of Medicine at Memorial University implemented a new standardized form for resident evaluation of clinical faculty.
Summary of work: Residents are asked to evaluate faculty in thirteen specific teaching behaviors corresponding to the six non-Medical Expert CanMEDS roles on a 1-5 scale with a "N/A" (Not Applicable) option. Specific descriptions are provided for the behaviors labeled as "1" (Major Concerns), "3" and "5" (Outstanding). Ratings of "1" or "5" trigger a prompt for written comments. Nearly 1400 evaluations have been logged so far.
Summary of results: Aggregate data show that residents chose "N/A" in 12% of evaluations of the "Manager" role behaviors, and in 8% of evaluations of the "Interprofessional

Conflict" behavior. Other behaviors had 1 – 6% "N/A" ratings. In all behaviors, 82% - 95% of ratings were 4 or 5.

Conclusions: A study combining surveys and focus groups is underway to investigate why residents chose "N/A" for these specific behaviors and how residents go about choosing their ratings. We will also examine individual evaluations to measure the correspondence between written comments and numerical ratings in order to validate the ratings.

Take-home messages: This study will inform refinement of the behavior descriptions and instructions on the form, and ultimately provide better feedback to clinical teachers.

6W/9
What makes a good teacher? A qualitative analysis of student concepts before and after a teaching skills course

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Jane Currie (*Imperial, Medicine, London, United Kingdom*)
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Background: We have established a one-week teaching skills course within an undergraduate curriculum in a London medical school. Mandatory institutional evaluation concentrates on student reactions to teaching while the major intent of the faculty is to effect a change/transformation in participants. We have sought evidence of this by comparing student concepts of a 'good teacher' before and after the course.

Summary of work: Students were asked to identify key feature(s) of a good teacher as an ice-breaker at the start of the week; at the end students were asked to consider whether their views had changed. Data was collected from 120 of 140 students within 5 consecutive cohorts of participants. Qualitative data was analysed by thematic analysis and coding conducted by 3 co-researchers.

Summary of results: Pre-course main themes were 1.Personal qualities (n=229) within which communication (n=39), patience (n=32), enthusiasm (n=30), approachability (n=21) were most frequent 2. Teaching skills (n=93) with feedback (n=20) and choosing appropriate level (n=20) top 3. knowledge (n=51). Post-course, 119 agreed with initial comments but additional points were given for knowledge (n=10), personal traits (n=46) and teaching skills (n=115).

Conclusions: These data demonstrate a change in participants' views of the relative importance of teaching skills in contributing to good teaching.

6W/10
Importance Attributed to University Activities by Clinical Faculty

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Background: Full-time medical school faculty members carry out various activities, not equally valued in career evaluation. This study aimed at determining: a) the importance that clinical faculty of a Brazilian medical school attribute to their different activities; b) the relationship between attributed importance and time devoted to these activities.

Summary of work: Clinical faculty (N=140) were invited to respond to a self-administered questionnaire. Respondents (N=39) were asked to rank 20 listed activities according to their attributed importance, and to state to which activities they devoted most of their time.

Summary of results: The activities reported as most important were: clinical teaching, research and advising residents/trainees/undergraduates. Less value was attributed to cultural activities, organization of events and consulting for research institutions. More than half the faculty (53.8 %) reported patient clinical/surgical care as the activity they devoted most of their time, although not attributing importance to it. Advising residents/trainees and clinical teaching were also activities to which half of the respondents devote large part of their time.

Conclusions: Activities most valued by faculty relates to teaching and research. Although most faculty members carry out direct patient care, this is not perceived as important.

Take-home messages: Faculty tend to value activities to which they devote most of their time.

6W/11
Developing Student Friendly Faculty Scale (SFFS)

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Background: The aim of this study is to develop a scale that takes student satisfaction to the center, to evaluate the quality of education in a faculty.

Summary of work: We tried to develop a scale based on the most prominent student needs and values. A total of 25 items were selected from a wide items pool (64 items). The inventory was applied to 373 students. The items evaluated as: Inadequate=0 points, partly=2 points, adequate=4 points. To determine the validity of the scale, structure validity, factor analysis has been estimated.

Summary of results: A total score of Student Friendly Faculty Scale (SFFS) were calculated (min:0, max:100 points). We used amulets as a cultural symbol (believed that keeps you away from the evil eyes) for starring the faculties for their

levels of being student friendly. The scale was categorized into 4 categories: unreliable-one amulet, cautious-two amulets, reliable-three amulets and student friendly-four amulets.

Conclusions: The findings suggest that the scale called student friendly faculty scale (SFFS) is a valid and reliable instrument.

Take-home messages: A scale that takes student satisfaction to the center may be used as objective criteria to assess the quality of faculty and may be used as a tool in accreditation of education.

6W/12
Faculty Appraisals: Taking Standard-Setting beyond Student Assessments

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Rukhsana W Zuberi *(Aga Khan University, Educational Development, Karachi, Pakistan)*
Shazia Sadaf *(Aga Khan University, Surgery and Educational Development, Karachi, Pakistan)*

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Background: The Aga Khan University plans to introduce the faculty clinician-educator track. For the educational component four key areas identified are teaching; educational administration; educational research; mentoring and educational innovation. The problem was to assign weightages to these key areas for faculty at different positions to be used for appraisals.

Summary of work: Angoff Standard-setting method was adapted to assign weightages which are valid, fair and acceptable. Six judges were selected ranging from instructor to professor levels based on medical / dental qualifications and significant educational responsibility. To ensure fairness, the weightings were decided to be based on the proportion of time expected to be spent on each of the key areas. The prototype question developed for standard-setting was: What is the probability of the faculty [e.g. professor] to spend time on the activities pertaining to key area [e.g. educational research]? Each judge had to make a total of 16 decisions i.e. pertaining to each of the four key areas for faculty at four different positions.

Summary of results: The judgments were added and averaged to determine the performance weightings for each of the 16 categories. Inter-rater reliability identified using Cronbach's alpha is found to be 0.879.

Conclusions: The method adopted matched with the purpose of criterion-referenced decision making. Validity and acceptability of the judgments were ensured by the careful selection criteria for the judges. A high inter-rater reliability indicates the validity of judgments.

Take-home messages: Standard-setting methods can be adapted and applied for high stakes valid and reliable decision making even beyond student assessments.

6X Posters: Basic Sciences

6X/1
The Impact of Alternating Anatomy Dissection Teams on Practical Examination Performance

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D.J. Lowrie, Jr. *(University of Cincinnati College of Medicine, Department of Medical Education, Cincinnati, United States)*
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Background: The use of dissection in learning human anatomy has well-established benefits. Dissection, however, requires substantial curricular time. The use of alternating dissection teams may provide a means of preserving the educational benefits of dissection while substantially reducing its time-commitment.

Summary of work: Two teams, each consisting of three medical students, were assigned to each cadaver. Teams alternated dissection responsibilities every other laboratory session. Dissection laboratories were followed by peer teaching sessions in which each team taught the other the anatomy they had dissected. A paired retrospective statistical analysis was conducted to determine whether student performance was higher in identifying structures their team had dissected.

Summary of results: Students performed statistically significantly higher in identifying anatomy their team had dissected compared with anatomy they had been peer-taught. However, the difference in performance, on average, was roughly only 3%. This difference was maintained when controlling for intrinsic differences in question difficulty.

Conclusions: The use of alternating dissection teams frees considerable curricular time. While the impact on learning is statistically significant, this impact may be within acceptable bounds.

6X/2
The Role of Cultural Protocols in Orientation to Human Anatomy

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Richard Faull *(The University of Auckland, Department of Anatomy with Radiology, Auckland, New Zealand)*
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Maurice Curtis *(The University of Auckland, Depatment of Anatomy with Radiology, Auckland, New Zealand)*
Uesifili Unasa *(The University of Auckland, Chaplain, Auckland, New Zealand)*

Eru Thompson *(The University of Auckland, Kaumatua, Auckland, New Zealand)*

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Background: Cadaveric dissection is important for the acquisition of knowledge and skills in human anatomy. It is also a significant step in the socialization of medical students as they transition from lay people to trainee physicians. Understanding the challenges associated with this transition, many institutions provide an orientation to human dissection.
Summary of work: At the University of Auckland, the orientation grew from an informal process for indigenous (Maori) students who voiced cultural concerns about dissection and asked that Maori protocols be observed. These protocols evolved into the current orientation process attended by all students that now also includes viewpoints from leaders in anatomy, psychology, professionalism and the chaplain. A reflective debriefing session is held in subsequent tutorials.
Summary of results: The cultural protocols reinforce the objectives of orientation by reducing feelings of cultural and spiritual restriction, reducing anxiety and increasing feelings of permission for respectful participation in dissection.
Conclusions: An orientation can help reduce emotional trauma associated with dissection, assist in the social transition of medical students and create opportunities for students to begin reflective practice.
Take-home messages: Cultural protocols provide a unique platform for students to transition into the study of human anatomy and gain an appreciation of Maori attitudes to the human body and medicine.

6X/3
Histology Teaching, Learning and Assessment in MBBS Programmes at two London Medical Schools

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Background: Histology is the study of the microscopic anatomy of human cells and tissues. Despite being a core component of medical curricula, it attracts very little attention in medical education research.
Summary of work: This study mapped contrasting histology curricula at two London medical schools and placed these in the context of national guidelines for undergraduate medical education in the UK. It also examined tutors' pedagogic choices and aspirations for their histology curricula via semi-structured interviews and, using focus groups, investigated junior and senior medical students' perceptions of learning histology. Limited observations of histology sessions at each institution were also carried out. An inductive qualitative analysis was conducted, using Framework Analysis.
Summary of results: Strands within the findings included benefits and challenges of introducing virtual microscopy which permits off-campus access to learning materials: challenges of encouraging active leaning in histology and establishing links between histology and clinical practice, particularly for junior students.
Conclusions: Histology curricula are evolving to become more student focused, although there are no obvious 'quick fixes'. This research provided insights into tutors' and students' perceptions, which may help guide curriculum development.

6X/4
Student perceptions of the inclusion of full body digital X-ray images (Lodox® Statscan®) as a tool for surface anatomy education

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Background: To motivate second year medical students to engage with surface anatomy, full body digital X-rays (Lodox® Statscan®) of each cadaver (n=40) were printed on posters and placed in the dissection venues at the Faculty of Health Sciences, Stellenbosch University. For each organ system, students had to a find list of organs / structures on these X-ray images and palpate them on the cadaver and themselves. Students had to draw normal and actual organ positions on laminated images provided. The accuracy of these drawings was assessed and surface anatomy was also tested during practical identification tests of each system module. The aim of the study was to gauge the perceptions of students to this form of surface anatomy teaching.
Summary of work: A voluntary, anonymous questionnaire (response rate 79%) on the use of the images was completed at the end of the academic year.
Summary of results: Students found the images to be useful for visualizing surface anatomy of all systems except the urogenital system. Suggestions offered by students were to provide online labeled images. Students requested an extra oral assessment for surface anatomy during each module.
Conclusions: Students believed the images to be beneficial to their studies and that their use should be continued in the future.

6X/5
Initial expectations in first year medicine students about human anatomy

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(Presenter: LA. Arraez-Aybar, Complutense University, Anatomy and Embryology II, Faculty of Medicine, Madrid 28040, Spain, arraezla@med.ucm.es)

Background: Expectation is defined as the subjective assessment of the possibility of achieving a specific goal. Teachers have traditionally been considered as people who influence with their expectations in students. The opposite situation has barely been considered: the student influence on the teacher. To achieve the excellence at the University, it is necessary to consider what the student wants or expects in terms of training and the service that the University offers.
Summary of work: With this background, our goal is to establish the design of a standardized evaluation system that incorporates useful and reliable expectations and preferences of the learning-teaching methods and student assessment procedures and issues that contribute to improving teaching quality in the teaching of Human Anatomy.
Summary of results: We present the results of a survey of students in first year of Medicine. Some of the options listed are: enrolled in this course by vocation (19%). Knowing the human body is what we expect from the Human Anatomy course (59.8%). Problem based learning (47.1%) is preferred to lecture (20.7%). The theoretical exam (58.6%) is the preferred method of evaluation, followed by the practical exam on cadaver (23.6%). There is a significant relationship between the items pass the course and online learning ($X2=.001$).
Take-home messages: To achieve the excellence at the University, it is necessary to consider what the student wants or expects in terms of training and the service that the University offers.

6X/6
Modern educational methods of Anatomy

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Background: Regarding recent developments in educational techniques of Anatomy, it is more common to use modern methods rather than dissection. So, we have planned and used modern educational techniques of practical anatomy at Tehran University of Medical Sciences in 2011.
Summary of work: In the planning phase, widespread research was done in order to recognize modern educational methods of practical anatomy. Then, multimedia, dissection, models and surface anatomy were chosen as the best ones.

In the next phase, a number of stations were devised to teach each subject of anatomy. A total of 160 medical students were divided into 4 groups of 40 and a two-hour session was devoted to each group. Also, students of each group were divided into 4 subgroups which were supposed to visit all 4 stations at the end of the session.
Summary of results: The combination of models, dissection, multimedia and surface anatomy had positive effects on students' learning. Moreover, the subjects were distributed among teachers and each teacher was given a specific subject. All the teachers were satisfied with the way that students were able to get prepared before the class.
Conclusions: Modern educational techniques cause satisfaction among students and teachers as well as motivating learners to operate efficiently.

6X/7
Resources used to learn anatomy: a questionnaire based study of medical students

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Background: At the University of Birmingham, anatomy is taught mostly in small group teaching sessions. A questionnaire was designed to ascertain which were the most popular resources to learn anatomy. This included a list of resources such as e-learning resources (websites, online videos and 3D animations), and conventional learning resources such as textbooks.
Summary of work: The questionnaire was completed by 311(85%) first year medical students, who selected and ranked their preferred resources.
Summary of results: Students were found to use multiple resources including textbooks (24%), internet (21%), lecture/ small group teaching notes (21%), and anatomy videos (12%). E-books were not used. Textbooks were found to be the most popular resource with internet, lecture/small group teaching notes and atlases being widely utilised.
Conclusions: To better understand difficult concepts in anatomy the use of multiple resources should be encouraged. Information from textbooks should be supplemented to allow visualization of anatomical structures. This could be in the form of 2D (atlases) or 3D (online animations) visualization. Students are utilizing multiple resources to learn anatomy however additional resources which allow improved visualization such as models and 3D animations remain under utilised.
Take-home messages: Multiple resources are being used by students to learn anatomy; however certain useful resources are being under utilised.

TUESDAY 28 AUGUST 2012

6X/8
Teaching and learning Anatomy in environments of medical replication

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Background: Technological advances of the last decades have revolutionized the teaching of medicine. The use of 3D simulators in situations of medical replication has favored the development of abilities and skills of students in the clinical area. Little has been said about the consolidation of knowledge built in the subjects of the preclinical area, specifically in human anatomy.
Summary of work: Three groups of freshmen were studied (1110, 1124, 1122), during the practice "Exploration of back of the eye" in the center of education and certification of medical skills (CECAM). The contents referring to anatomical knowledge had been covered previously. A test of five items was applied at the beginning, the same test was applied after three weeks of practice.
Summary of results: Groups 1122 and 1124 increased the number of successes in all the questions after the practice in the CECAM, while in the Group 1110 improvement was only seen in questions 1 and 5.
Conclusions: The use of 3D simulators of medical environments replication is a strategy for teaching and learning, that promotes students to consolidate the learning of Anatomy, and gives them the opportunity to use them for solving problems in clinical settings.
Take-home messages: Increase practical experiences in 3D simulators during the learning of human anatomy for promoting the consolidation of knowledge and increasing the motivation of students.

6X/9
Clay-modelers of brain structures and their observers perform similar in anatomical tests

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Background: Estevez et al.(2010) reported that students who constructed models of deep brain structures with play-dough performed better on anatomical tests than students that re-examined the same structures from cross-sections. We copied her clay-modeling exercise and studied the role of visual information compared to visual plus tactile information in acquiring brain-anatomy knowledge.
Summary of work: Volunteers were 64 student-pairs. After a pre-test, one student per pair had 45 minutes to construct the model from a manual. The other student was only allowed to watch and to read from the manual. The students were asked not to speak. Afterwards a post-test was taken. All students returned next evening for consolidation-tests. All tests had the same format: 10 MCs, 10 EMQs, and 15 fill-in names from drawings of brain cross-sections. Paired T-tests were used to analyze differences between the clay-modelers and the observers in the anatomical tests.
Summary of results: The clay-modelers and the observers performed similar in all tests. Results of the visual tests with cross-sections were lower in all cases compared to textual tests.
Conclusions: In conclusion, the additional tactile information did not add to the built up of brain-anatomy knowledge.
Take-home messages: Learning gain by observing others performing a clay-modeling exercise equals learning gain of the clay-modelers themselves.

6X/10
Successful application of an online tool to engage students and improve use of time in an anatomy course

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Background: Reduction in teaching time and resources for anatomy is a problem. Previous research showed students in clinical practice are lacking knowledge necessary for rotations. We created an interactive website containing clinically-oriented anatomy knowledge. Objective: Establish if the tool on the website to further to support anatomy learning was useful, attractive and had impact on learning.
Summary of work: Video recordings of traditional presentations (live classes) were made using Camtasia® and uploaded to Folia Anatomica Interactiva, our webpage to support anatomical learning. Students reviewed the video and had a short exam at live sessions. Impact of the videos was evaluated by: Observation of participation in class, and an anonymous and voluntary survey filled in by students.
Summary of results: Four videos were used by 89,6 to 100% students to prepare for class. Students participated more and answered more actively during each session. Survey: between 87% and 95% scored with 4 or 5 each video for quality, clarity and usefulness. More than 95% of students felt the class was more practical, helped in following the class and understand topics.
Conclusions: Previously reviewed videos made class more dynamic, practical and centered in solving problems and questions. Videos need to be improved and more interactive.
Take-home messages: Creating interactive tools improved our anatomy live sessions.

TUESDAY 28 AUGUST 2012

6X/11
Perceptions of medical undergraduates and pre-interns regarding the preclinical basic sciences teaching programme in a South Asian University

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Background: Preclinical teaching of basic sciences provides the basis for the development of clinical reasoning skills and the ability to make management decisions. However, many senior undergraduates, pre-interns and doctors indicate that preclinical knowledge is poorly recalled and has little relevance to their clinical practice.
Summary of work: A descriptive cross-sectional study was conducted among 118 pre-interns and 146 undergraduates using a self-administered questionnaire, regarding their perceptions on preclinical basic sciences teaching.
Summary of results: >75% both pre-interns and undergraduates agreed that preclinical teaching was useful and relevant for future clinical work. 50-75% frequently revisited preclinical subjects despite unapparent clinical significance. 55% couldn't remember most of preclinical content. Majority suggested more teaching time and concurrent clinical exposure for preclinical teaching. Undergraduates and pre-interns differed in that 56% of undergraduates and 37% of pre-interns had studied just to pass examinations (p<0.01).
Conclusions: Majority of undergraduates and pre-interns felt that preclinical teaching was useful, interesting and relevant for future clinical practice, though recall and clinical significance were suboptimal. Revising teaching methods with more teaching time utilizing clinicians should be considered.
Take-home messages: More emphasis needs to be given to preclinical basic sciences teaching in medical education.

6X/12
Teaching Biochemistry through Flash cards

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Background: All biochemists would readily agree that visualization tools are essential for understanding and researching the molecular and cellular biosciences.

Summary of work: In a batch of 100 first years M.B.B.S students topics in Biochemistry that need special emphasis such as the Clinical correlations in Biochemistry were identified. A topic was assigned to a group of two students .The students took a weeks' time and came up with a flash card with pictures on that topic. The Flash cards were then discussed in 10 theory sessions. Each individual got all the 50 Flash cards for his /her reference. Questionnaire was circulated to gain the feedback of students towards the effectiveness of this methodology .
Summary of results: Every student had enjoyed this methodology.
Conclusions: As the Chinese proverb goes "A picture is worth a thousand words" The pictorial representation wherever possible make the topic very lucid.
Take-home messages: "Come together,Learn together,Grow together".

6X/13
Pathology as an integrated part of the new curriculum in Russian medical school

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Background: The traditional curriculum in Russian medical school includes basic medical subjects, such as pathologic anatomy and pathophysiology learned separately. Recognizing the importance of basic and clinical sciences integration for improvement of medical education, the SamSMU administration has provided curricular reforms.
Summary of work: The new curriculum has been running at Healthcare Faculty of Medical University in Samara for 3 years. As a part of its third year education an integrated pilot programme concerning combined module of pathologic anatomy, physiology and biochemistry has been established by the Department of General and Clinical Pathology. The module is divided into lectures and practical training headed by one tutor, handbooks are used in any kinds of training. The module is mostly based on learning using PBL together with relation to functional data, macropreparation and histological slides study which helps to solve the problem. Besides the tutor has much more time to discuss the problem and to concentrate on what is absolutely necessary than in the traditional curriculum.
Summary of results: Students accept very positively this kind of studying. We compared the results of students in tests and examinations in 2007 when they get the information from these three subjects (pathologic anatomy, pathophysiology and pathobiochemistry) separately, and in 2011. Active learning groups of pilot progrmme show higher results (the mean of scores was 133.4 in 2007 and 146.8 in 2011) and greater satisfaction of learning pathology.
Conclusions: Such first experience in Russia seems to be very useful in medical education progress.

Take-home messages: This programme emphasizes integration of various basic subjects and clinical relevance of theoretical information.

6X/14
How to Nurture Clinical Skills with Basic Sciences

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Background: With the embryogenesis of the organ systems-based curriculum, the traditional medical curriculum has been challenged. Barriers between individual curriculum disciplines are being broken down while the basic sciences and clinical curriculum become integrated. With this new birth, there is need to continuously monitor its implementation. The aim of this study is therefore to evaluate the effectiveness of teaching and learning methodologies during delivery of the basic sciences and clinical skills curriculum.
Summary of work: This study is an analysis of research studies previously conducted by the authors on basic sciences and clinical skills integration 1,2,3,4. The results of these studies are compared and their conclusions summarized.
Summary of results: In the Deep Tendon Reflexes study, attenders performed better on related multiple choice questions than non-attenders, p=0.04. Similarly, the Blood Pressure lab study demonstrated that non-attenders did significantly more poorly.
The latter two studies involved the use of electronic support in teaching and learning. Students who spent more hours reviewing delivered lectures on media site were more likely to have higher Neuroscience grades (p=0.04). Secondly, the plagiarism software program, Turnitin, was effective in detecting similarities in reports written by medical students.
Conclusions: Doing clinical skills labs compared with not doing them had a positive outcome in learning. Additionally, electronic support using media site (webcasting) and plagiarism software is effective for teaching and learning of basic sciences and clinical skills.
Take-home messages: Clinical skills labs and electronic support are effective approaches to teaching and learning basic science and clinical skills.

6X/15
NoDAL AID: A Novel Dynamic Anatomic Learning Atlas for Improving Delineation in the Radiotherapy Treatment Planning of Advanced Breast Cancers

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Background: Radiation oncology requires a firm grasp of radiographic anatomy. To improve knowledge of breast and regional nodal anatomy and their relevant spatial relationships, an interactive 3D computer atlas was developed.
Summary of work: Using a radiotherapy planning DICOM dataset, multi-planar reconstruction, image segmentation and 3D volume rendering were performed. Image series and 3D structure sets were compiled within an electronic learning package. Structures of interest were identified, delineated and labelled. 3D anatomic models in concert with learner assessment tools were then developed.
Summary of results: A multimedia atlas of high fidelity representations for breast radiotherapy was developed. Labelled key anatomic structures can be viewed through all sectional planes and manipulated in 3D from multiple perspectives. Unlike existing atlases, NoDAL AID builds upon and more fully depicts anatomic structures of significance in both multi-sectional and 3D volumes and affords a reference for structure identification and delineation.
Conclusions: The union of site specific anatomy in the treatment position with learning assessment tools enables evaluation of outcomes and feedback. The reference is suitable for both teaching and application at the point of care.
Take-home messages: Using simple software, customized specialty specific anatomical teaching resources can be readily developed.

6Y Posters: The Doctor as Teacher/Training the Surgeon

6Y/1
Residents as Teachers: A Needs Assessment in Singapore

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Sok Hong Goh (*Duke-NUS, Medical Education, Research and Evaluation, Singapore*)
Diana Goh (*Singapore General Hospital, Center for Research & Faculty Development, Singapore*)
Colin Song (*Singapore General Hospital, Center for Research & Faculty Development, Singapore*)
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Background: In 2010 Singapore established US-model specialty residencies as a replacement for the largely British-based postgraduate specialty training. As part of that change,

a Faculty Development (FD) competency to increase teaching skills of residents was established by the graduate medical education office.

Summary of work: In 2010 & 2011 a baseline needs assessment was conducted. 282 Residents rated: attitudes about teaching, confidence and involvement in clinical behaviors, and confidence and frequency performing teaching activities. Duke-NUS 2nd Yr students rated quality and quantity of resident clinical behaviors, the impact of residents' teaching at the end of each of the 5 core clerkships (324 forms returned).

Summary of results: Residents were modestly confident in teaching and performing educational tasks. But were not involved or felt they performed the educational tasks very often. Attitudes were positive about teaching, but felt had little time, training, feedback, not formally rated, and teaching was not rewarded. Students generally agreed that the quality was modest and the frequency was low but professional development impact by junior doctors was high.

Conclusions: This highlighted areas to focus on in order to achieve the FD competency.

Take-home messages: We will continue to track these attitudes over time and measure impact of strategies designed to improve residents' attitudes, confidence, and skills.

6Y/2
What effect do short Medical Education courses have on teaching style?

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B Stewart (*University of Glasgow, United Kingdom*)
S Richardson (*Kings College London, United Kingdom*)
H Lee (*Imperial College London, United Kingdom*)
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Background: Since the early 1990s the Chief Medical Officer and General Medical Council in the UK have recommended that doctors involved in teaching should be formally trained in medical education. Many doctors undertake a 1 or 2 day "train the trainer" course to fulfil this requirement.

Summary of work: 30 doctors attending a 1 day introductory medical education course were asked to complete a questionnaire pre & post course and at one month.

Summary of results: 57% of trainees were in their second postgraduate year (range year 1-7). 91% had not attended a medical education course before but 100% had prior experience of teaching. Pre-course participants reported undertaking 5 hrs/month of clinical teaching compared to 8 hrs/month post-course. One month after the course 80% of participants, compared to 68% pre-course routinely wrote a session plan. Following the course 90% of trainees had incorporated educational techniques such as buzz groups into their teaching sessions. One month following the course

100% of respondents sought feedback on their teaching sessions.

Conclusions: After attending an introductory medical education course trainees taught frequently, planned their sessions, incorporated interaction and sought feedback.

Take-home messages: After attending an introductory medical education course trainees taught frequently, planned their sessions, incorporated interaction and sought feedback.

6Y/3
Residents' teaching skills improvement - setting up a resident as a teacher program

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Ya-Ting Yang (*Far Eastern Memorial Hospital, Department of Medical Education, New Taipei, Taiwan*)
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Background: Teaching is considered an important competency for residents to achieve during their training. Instruction in teaching skills focused on residents may assist them in becoming more effective teachers and increase their overall satisfaction with teaching. We established a teaching skills course for residents and assessed the benefits following participation in a teaching skills development course.

Summary of work: Study participants were residents at Far Eastern Memorial Hospital in Taiwan. They participated in a 4-hour workshop on teaching skills development. Participants had to join both lectures and simulation course for teaching and feedback. They completed a postcourse questionnaire that enabled residents to evaluate the course and assessed new knowledge and skill acquisition.

Summary of results: Thirty-eight residents completed the training course and postcourse questionnaires. The vast majority of respondents indicated that they taught medical students or junior residents (30 of 38 [78.9%]). No residents received any formal didactic program for them on teaching skills before. All of the course participants agreed or strongly agreed that this workshop was helpful to them as teachers.

Conclusions: Few residency programs had instituted resident as a teacher training curricula. A resident as a teacher training workshop will provide benefit by the residents, and they reported improvement in their teaching skills.

Take-home messages: Resident as a teacher program is a good instrument for training residents teaching skills.

6Y/4
Experience and expectations of Peer Mentoring amongst junior trainees in Paediatrics

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Background: Mentoring has been shown to benefit trainee doctors, but little evidence exists regarding the role of Peer Mentoring. We conducted a pilot study to inform the development of a Peer Mentoring Programme for Paediatric trainees.
Summary of work: At initial induction to training, we identified Paediatric trainees interested in participating in a Peer Mentoring Programme which involved junior trainees being peer mentored by senior trainees. Prior to starting the Programme, junior trainees were asked to complete a web-based survey.
Summary of results: Of 84 trainees, 76 (90%) were keen to participate, and 48 (57%) responded to the survey. 52% of respondents reported no prior experience of mentoring. Of those with experience, 74% had acted as mentee and only 13% specifically reported experience of Peer Mentoring. Expectations of Peer Mentoring included advice (63%), contact with experienced colleagues (33%), assistance with navigating the training system (21%) and developing their career pathway (57%). 10% mentioned reflection or goal-setting.
Conclusions: There is significant demand amongst junior Paediatric trainees for a Peer Mentoring system. However, expectations are diverse.
Take-home messages: Understanding the needs and expectations of trainees is vital to the development of a novel Peer Mentoring Programme in Paediatrics.

6Y/5
Supervision of medical students in Early Professional Contact augments professional development of junior doctors during internship at Sahlgrenska University Hospital

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Background: Junior doctors undergoing internship at the Sahlgrenska University Hospital are frequently called upon to supervise medical students. The University of Gothenburg offers an Early Professional Contact Course that encompasses the first two years of Medical School, recently including junior doctors as supervisors.
Summary of work: A junior doctor and four students met during three interactive sessions in a clinical setting, focusing on personal and professional development using methods such as feedback and reflection. At the end of the course a questionnaire was used to evaluate the experiences of both students and supervisors.
Summary of results: The supervisors were selected on the basis of their interest in clinical education and underwent training in order to improve teaching skills. We found that this training in combination with the student sessions increased the awareness of the adult learning process.
Conclusions: Discussing professional development with medical students augmented the supervisor's process of reflection and professional development. The effect of assuming the role of clinical supervisor early in the career ensures that supervision becomes a natural part of clinical work.
Take-home messages: It is possible even with limited clinical experience to facilitate professional development in both students and supervisors.

6Y/6
Introducing clinical supervision of medical students: An experience-based course for junior doctors

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Background: Junior physicians undergoing internship at the Sahlgrenska University Hospital, are frequently supervising medical students. The medical education group (MedPed) at the Medical programme, Sahlgrenska academy, University of Gothenburg was appointed to design a new course, ' Intern's introduction to clinical supervision of medical students'. Learning aims of the course included basic structuring skills in clinical supervision with reflection and feedback.
Summary of work: Inspired by Norwegian educationalists Handal & Lauvås, clinical educators and junior physicians jointly designed an experience-based course comprising 2,5

days. After an introductory day, junior physicians worked in pairs in clinical practice and supervised each other. Feedback and reflection were included and the reflections were then brought to a follow-up day. Group discussions focused further reflection on participants' experiences from supervising medical students.

Summary of results: 60 junior physicians attended the course, underwent structured feedback around their clinical teaching. Participants' evaluations address learning aims in the course and will be discussed. Junior doctors' awareness of the importance of basic structuring skills, feedback and reflection in clinical supervision was enhanced.

Conclusions: An experience-based course seems to fit well to introduce and to empower junior physicians to contribute to a better learning environment in medical clinical education.

6Y/7
The development of junior doctors as teachers and their role within the medical school community

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Background: Teaching is an important component of being a junior doctor as highlighted in the GMC document The Trainee Doctor(2011). Despite this, there has been little work investigating how doctors develop as teachers.

Summary of work: Preliminary work using the Beginning Teachers' Basic Skills (BeTeBaS) questionnaire demonstrated a significant difference between the teaching skills seen in Foundation year junior doctors compared to second year medical students.

Summary of results: Junior doctors achieved a significantly higher mean score in eight out of twelve teaching domains assessed by the questionnaire including 'student evaluation'. One of the domains where there was little difference between medical students and junior doctors was 'communication with the medical school faculty'.

Conclusions: We conducted a series of focus groups with foundation year doctors and second year medical students to determine how they perceived their role within the medical school as a teacher. Junior doctors provide a significant proportion of teaching for medical students, but they do not prioritise or feel confident liaising with the medical faculty for guidance on teaching, or to provide feedback on student progress.

Take-home messages: It is important to work with and mentor students and junior doctors to help them to become a member of the 'medical school education' community of practice.

6Y/8
Innovative opportunities for trainees to develop as medical educators

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Background: AWP is responsible for the delivery of the Bristol Medical School clinical psychiatry curriculum. This takes place at six geographical sites across the trust, co-ordinated by a Consultant Psychiatrist unit tutor. Teaching is delivered by a range of clinical staff including trainee doctors. Developing teaching and supervision skills is becoming increasingly recognised as an essential part of medical training. A recent GMC consultation also highlighted that doctors directly responsible for medical education should be trained, accredited and supported. Although trainees have always taught, opportunities to take on more formal educational roles have been limited.

Summary of work: We developed two supervised educational roles for trainees to prepare them for their future educational responsibilities. In the mentorship programme, trainees act as mentors to medical students during their psychiatry unit with a focus on pastoral support and one to one feedback. The Associate Unit Tutor is a more formal, extended role, aligned to recognised educational standards, which senior trainees apply for through a competitive process. They share the tutor's responsibilities, with a focus on developing new learning approaches and opportunities.

Take-home messages: There are a wealth of training opportunities that can be developed within a trust for trainees to extend their skill set as educators.

6Y/9
Teaching skill in labor attendance and delivery of residents training in Obstetrics and Gynecology

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Background: Teaching skill is one of the imperative skills of residency in training. Labor attendance and delivery are essential requirements for graduated Thai medical students. Teaching and supervision of labor attendance and delivery are laborious and stressful because of the responsibility of patient safety.

Summary of work: The Department of Obstetrics and Gynecology provided residents for closely supervised medical students to labor attendance and delivery. An evaluation of teaching skill of the residents was performed using a

questionnaire at the end of the medical students' learning period. It consisted of four parts including responsibility, teaching technique, performance as a medical teacher and attitude.

Summary of results: A total of 482 questionnaires evaluated by the medical students, between 2008 and 2010 academic years were analyzed. Across-sectional analysis of 17 residents showed that high scores were obtained in all levels of residents. The third –year residents had the highest scores in all parts of evaluation. A three-year longitudinal analysis of the residents who started training in 2008 showed an improvement of teaching skill in 4/5 residents.

Conclusions: Teaching skill can be improved by formal assignment in the training program.

Take-home messages: The medical students appreciated the residents' role in teaching of labor attendance and delivery.

6Y/10

Daycase laparoscopic hernia surgery – an underutilised training opportunity

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Background: Laparoscopic hernia (LH) operations offer trainees a great opportunity to learn and develop a variety of core skills applicable to many aspects of general surgery. We aim to highlight opportunities in daycase surgical units (DSU) that could help improve surgical training.

Summary of work: Operative Room Management Information System records were reviewed for LH operations in DSU at a large Foundation Trust between January 2007 and 2012. Data collected included procedure time (PT), length of hospital stay (LOS) and lead and assistant surgeons involved.

Summary of results: Of the 260 LH operations, consultants performed 93.1% (n=242). Trainees attended 13% (n=34) and took the lead in 6.9% (n=18). Mean PT was 55 minutes (+/-0.37) for consultants and 62 (+/-0.37) for trainees, (p=0.056). Median LOS was less than 24-hours for both groups, with no significant difference in unexpected hospital admissions, (p=0.29).

Trainees attended and performed a minority of LH operations in DSU, with no associated increase in PT and LOS when they took the lead. LH surgery offers trainees the opportunity to develop a variety of essential transferable skills. Trainee should therefore be encouraged to attend DSU and take the lead in appropriately selected cases under adequate supervision.

6Y/11

Education of surgeons in Denmark evaluated by trainees and trainers

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Background: Surgical training to become a specialist was changed in 2003 in favor of the Can-Med's competency-based model in order to meet future challenges and demands from society and patients.

Summary of work: A questionnaire was distributed to all surgical trainees in 2010 (N=112) and to consultants in the surgical wards being either head of department or responsible for education (N= 2 x 23) in public hospitals in Denmark. They were asked for satisfaction and planning of work using a 5-point Likert scale.

Summary of results: 67% trainees answered the questionnaire, female:male ratio 1:2, which was equal to the total group. 73 % of the heads of department, 91% of the educational responsible consultants answered the questionnaire. The trainees wanted more and dedicated day-time training and supervision. Only 21% indicate that they had influence on daily planning-of-work. Consultants found that the low number of supervised surgical procedures, lack of trainee interest and daily work-load were the most important threats to education.

Conclusions: Training of surgeons seems still to suffer from a lack of planned day-time education and low influence on planning of daily work, even though this was one of the main goals in changing to a competency-based model.

Take-home messages: Planning-of-work needs to be emphasized in surgical training.

6Y/12

Production of an e-learning course for pre-FRCS surgical trainees – Much more than advanced MRCS content

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Background: After considerable success with an online course dedicated to pre MRCS surgical trainees the University of Edinburgh has established the ChM in General Surgery to prepare pre FRCS surgical trainees for exit examination and upcoming consultancy responsibilities. The advanced nature of the course required not only a change in taught content but necessitated a complete redesign of course structure and teaching methods.

TUESDAY 28 AUGUST 2012

Summary of work: The advanced nature of the content relating to the Fellowship of the Royal College of Surgeons (FRCS) curriculum as well as the experienced nature of the surgical trainees has led to the development of dynamic case-based discussions the progression through which is dictated as much by the trainee as it is the tutor. Trainees are required to use their own understanding and experience over and above the textbook example. Although both programmes share an innovative e-learning platform, considerable adaption was made to provide the ChM the scope necessary to teach in such a flexible manner. Both courses share their use of expert e-tutors and quality assured material.

Summary of results: Students have already voiced their appreciation for the ChM and a constantly high level of student engagement in assessed discussions demonstrates the importance the trainees place on this tutor engagement.

Conclusions: Whilst content at both MRCS and FRCS level can be effectively taught online, it should not be approached in the same manner.

Take-home messages: Adapting teaching approaches as well as content is key to engaging trainees at different stages of their training.

6Y/13
An innovative model of surgical training to enhance cross fertilisation of best practice between surgical specialties

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Background: The purpose of these Interface Speciality Fellowships (ISFs) is to encourage inter-disciplinary learning so that best practice between related specialties such as Plastic Surgery, ENT, OMFS, Trauma and Orthopaedics and Cosmetic Group including Opthalmology and Dermatology is embedded. Currently in the UK these exist in Hand (10), Breast Oncoplastic (9), Head & Neck (7), Cleft Lip & Palate (6) and Reconstructive Aesthetic Surgery (18).

Summary of work: These ISFs have now developed into exceptional clinical training experience but also in the role of a Consultant including leadership development, finance and business, handling conflict and performance issues within the NHS and workforce planning.

Summary of results: The following innovative outcomes were achieved: 1) Consolidation of national funding with the Lead Dean as the Senior Responsible Officer. 2) National Recruitment. 3) Q/A of all centres . 4) Additional study leave of £1k per trainee. 5) Appointment of Surgical Education Advisor

Conclusions: Almost 50 trainees are going through these fellowships every year with outstanding feedback both from trainees and faculty. Centralisation of resources has allowed efficient and effective training to be delivered in a cost effective manner, to support development of future surgeons to meet the needs of the NHS.

Take-home messages: Inter-speciality training is a powerful cost effective educational tool. Such models can be developed further with Oesophageal (Thoracic and General Surgery) and Spinal (Orthopaedic and Neurosurgery) Surgery.

6Y/14
A strategy to improve residents' operative skill training in obstetrics and gynecology

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Background: Performing operations by residents under close supervision by senior staff doctors is essential in skill gaining and also for patient safety. This responsibility burdens the supervisors physically, mentally and legally. Commitment to close supervision of the residents with appreciative acknowledgment can be a platform, for approaching.

Summary of work: A group of skilled staff doctors voluntarily deployed the department strategy to improve residents' operative skills. They committed to supervise the residents performing operations. After one year of strategy implementation, a comparison of residents' experience between the pre- and the post- implementation period was conducted.

Summary of results: A significant increase in number of procedures performed and also residents' confidence were noted in all levels of residents, including vacuum extraction, forceps extraction, cesarean section, hysterectomy and vaginal operations.

Conclusions: In order to improve residents' operative skill, with a balance of patient safety, supervision by the skilled staff doctors is essential.Residents' positive attitude to seek for supervision and individual acknowledgment are the key success factors.

Take-home messages: Commitment and acknowledgment of individual workload can be key factors for staff contribution to close supervision of residency skill training.

6Y/15
Conceptualizing Improvements in an Obstetrics-Gynecology Clinical rotation Using a Sociocultural Framework

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Background: Medical educators are responsible for fostering positive learning contexts that support residents in their professional; development. Clinical rotations are critical to post-graduate education as they provide opportunities for residents to hone competancies related to all the CanMEDS roles.

Summary of work: In order to provide medical educators with a practical approach towards improving learning contexts within Obstetrics-Gynecology, we developed a specialty specific rating scale and integrated it with a conceptual framework that (a) identifies strengths and weaknesses of a learning context and (b) assists in conceptualizing remediations. Over a seven month period, 28 residents undertaking their clinical rotation responded to 21 items using a 4-point rating scale.

Summary of results: Descriptive statistics were generated to identify any perceived weaknesses in their learning context. The resultant means indicated lower ratings in regards to (i) receiving effective supervision from teachers, (ii) having an informative handbook, (iii) being assigned an appropriate work load and (iv) acquiring teaching skills. Thereafter a sociocultural framework was used to conceptualize possible solutions that took into account three different but inter-related levels of learning: individual, interpersonal and institutional.

Conclusions: Thus addressing the acquisition of teaching skills could involve explicit discussion of the importance of (a) residents being comfortable expressing their (individual) needs and (b) clinical educators who are receptive to acting on such comments (inter-personal).

Take-home messages: While comparable to other studies using a rating scale for diagnosing learning contexts, this study differentiates itself by providing guidanace for remediations vis-a-vis the integration of a sociocultural framework.

6Z Posters: Curriculum Development 2

6Z/1
The Swansea 6S curriculum model: embedding clinical excellence and social accountability in UK graduate entry medicine

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Background: The Swansea University Graduate Entry Medicine (GEM) Programme is designed around a curriculum model founded on current educational best practice.

Summary of work: The 6S model enshrines six guiding principles, that undergraduate medical education should be: 1 Situated in the Clinical Setting. Learning to be a doctor by doing what a doctor does, where a doctor does it. Didactic lectures are minimised, students experience a wide range of clinical experiences. 2 Student-driven. Maximising opportunities for learners to 'work it out for themselves' through experiential learning. 3 Spiral. Repeatedly revisiting, reinforcing and extending topics. 4 Simulating Clinical Practice. Case-based learning ensures that even fundamental concepts are learned in a clinical context. 5 Small. Facilitating high-quality learning within a supportive environment through small-group working and a small student cohort. 6 Serving the needs of patients and the public. Reflecting the needs of patients, stakeholders and communities, 'thinking global, acting local'.

Summary of results: We present the application of '6S' to the Swansea GEM programme and how it can be implemented elsewhere.

Conclusions: '6S' describes a curricular philosophy and structure founded on current best practice in medical education.

Take-home messages: '6S' is a practical, international curriculum model relevant to other medical schools.

6Z/2
Potential curriculum additions to better prepare final year medical students for the transition to junior doctor

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Background: Despite passing their final examinations many medical students feel unprepared for the transition to junior doctor, with particular anxieties surrounding expectations when on-call.

Summary of work: A series of sessions specifically aimed at preparing final year medical students for working on-call was run by a foundation year 1 doctor at a UK teaching hospital. Sessions were available on a sign-up basis, focused on common on-call tasks, and were interactive in format.

Summary of results: Following these sessions >90% of students stated that they felt better prepared for work as a junior doctor and would like the opportunity to attend further similar sessions. >90% of students also felt that such sessions should be integrated into the official medical school curriculum.

Conclusions: These results suggest that a change to the standard medical school curriculum to integrate teaching focusing on common tasks expected of the on-call junior doctor would be welcomed by, and of benefit to final year medical students.

Take-home messages: The transition from medical student to junior doctor is a difficult time and greater emphasis on preparing students for this transition helps improve both

knowledge and confidence. Such improvements will likely enhance both efficiency and safety among new cohorts of junior doctors and such teaching should become more widespread.

6Z/3

Does curriculum theory inform curriculum development? A real life example: London Air Ambulance (LAA)

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Background: This research used the London Air Ambulance(LAA) team training as a case example to examine the need for educational theory for curriculum development. The LAA training programme uses a simulation technique called "Moulage," which involves setting up lifelike scenarios that may replicate, as closely as possible, clinical situations the team may encounter. The project looked at what the LAA curriculum organisers considered when putting together the training programme, and saw that it is often based on their own practice and experience, rather then specific reference to educational literature. The research examined the value of this approach.
Summary of work: A literature review on simulation and curriculum was undertaken. Observational work and field notes were completed, and curriculum documents looked at. Semi structured interviews were also carried out. Thematic qualitative analysis was used.
Summary of results: Analysis will reveal key themes with curriculum development and the use of theory in practice. The work is currently ongoing and will be completed in May.
Take-home messages: Contains pointers which maybe relevant to others who are developing programmes in equally specialist areas.

6Z/4

Restructuring the Ambulatory Curriculum in Qatar

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Background: Hamad Medical Corporation, the main affiliate of Weill Cornell Medical College in Qatar is a JCI accredited hospital currently applying for ACGME-I accreditation. We restructured the ambulatory care component of the Internal Medicine residency program to align the curriculum to ACGME-I as well as to enrich the teaching and improve competency in out-patient setting.
Summary of work: A curriculum committee met regularly and developed steps and a timeline for redesigning the curriculum. We identified existing deficiencies, based on ACGME requirements and a validated resident satisfaction survey. Based on this information, our initial goals focused on 3 major areas. First, to improve patient care continuity-residents were assigned continuity clinics supervision. Second, to strengthen the educational component of the ambulatory curriculum - resident-lead morning conferences based on a set curriculum were added. Lastly, structured formative feedback and the mini- CEX were implemented. We plan to repeat the resident satisfaction survey at the end of the academic year.
Summary of results: We will share data from the initial survey as well as discuss our progress and challenges in supervision, continuity and assessment.
Conclusions: Institutions can utilize our experience in identifying deficiencies and restructuring their curriculums.
Take-home messages: Involving residents in the process of curricular change is beneficial in developing appropriate structure.

6Z/5

Bridging the Gap: An Evaluation of a Standardized Training Program for Radiation Therapy Students: A Pilot Project

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Background: The transition period from didactic learning to clinical training requires students to integrate their foundational knowledge from siloed learning to applying it clinically from a wholistic perspective. The aim of our pilot was to understand the usefulness and benefit of computer aided case-based learning and to measure practical impact to their knowledge and skill.
Summary of work: Five small group interactive knowledge labs (modules) were developed to build on each other. Participants completed a survey pre- and post- training. The survey captured confidence in cross sectional anatomy; user perception with volumetric imaging software manipulation; and current training satisfaction.

Summary of results: All (N=10) students rated the training modules as excellent. Pre-training, 20% of participants indicated they did not have enough volumetric image training, dropping to zero post-training. Confidence in cross sectional anatomy knowledge remained unchanged post training. Ability in performing an "easy" versus "challenging" volumetric image registration improved (70%) post training.

Conclusions: Initial assessment of an interactive on-line training pilot program was positive. The success of this program is important for the improved integration of pre-licensure students into clinical practice.

Take-home messages: Interactive case based training is beneficial to link the didactic and clinical curriculum.

6Z/6
For Profit medical education model improves access to health care for underserved populations

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Background: Restrictions on training and licensure, while supposedly intending to raise standards of health care, increase the risk of inadequate health provision, poor health outcomes and the disadvantaging of minorities and the poor. Alternative strategies for training physicians can have a significant impact on the provision of medical care without draining resources from less wealthy countries.

Summary of work: Limitations on the entering number of students to medical schools restricts access to medical education in the US and creates a shortfall of doctors that is filled by brain-drain of trained doctors from resource poor developing nations. As US trained physicians often opt to practice in high-income and resource-rich areas, there is a relative non-availability of quality medical care to minority groups and in rural areas. RUSM fills this gap by creating a for-profit medical education model that follows the quality guidelines set forth by the LCME.

Summary of results: Over 60% of students at RUSM come from under-represented minorities. RUSM provides over 3% of all US medical residents, filling 8-10% of the shortfall in US trained medical graduates. Over 74% of RUSM graduates go into primary care residencies. This is much higher than the top 5 US medical schools with the social mission of training primary care doctors (40-50%).

Conclusions: RUSM thus fills an important societal need and reduces the need for doctors from resource-poor nations.

Take-home messages: Alternative strategies for training physicians can have a significant impact on the provision of medical care without draining resources from resource-poor countries.

6Z/7
Spirituality in Physicians' Professional Routine

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Background: Spirituality can interfere in patients' health. Few Brazilian medical schools include 'spiritual semiology' in their curricula. This is a pilot study to understand the way physicians who deal with educational activities handle with spirituality during their practice.

Summary of work: A multiple choice questionnaire about spirituality was developed and applied to convenience sample of physicians.

Summary of results: 51 physicians (69% men and 31% women), from different specialties, answered the questionnaires. The majority was Catholic (52%), and most considered themselves religious (72%). Although 67% have never taken spiritual history from outpatients, 80% agree patients' spirituality can affect their health and believe the comprehension of the patients' spirituality can improve health outcomes. Physicians' difficulties in addressing spirituality described were: not enough time to discuss it (53%) and feeling embarrassed (31%).

Conclusions: In this sample the physicians recognize the importance of spiritual values to their patients' health. However, the majority did not address the issue during their routine situations. A possible explanation is medical education lack of training in this area.

Take-home messages: Brazilian medical schools should be stimulated to develop 'spiritual semiology' training in their curricula.

6Z/8
Can educational interventions improve the assessment and management of feverish children by health care professionals: the literature is lukewarm?

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Background: Initiatives to improve the management of the feverish child must be evidence based, cost effective, improve illness detection and reduce inappropriate admission. This review aimed to determine current best practice in educational interventions which improve the outcomes of children presenting to health care providers with fever.

Summary of work: A literature search, performed in collaboration with a senior clinical librarian, of Medline, CINAHL, Embase and ERIC was performed. Search terms related to fever, child* and education or training (multiple terms and MeSH headings were used to generate comprehensive search results). Relevant papers, analysed by two independent reviewers, were summarised in a specially designed grid format

Summary of results: A total of 2678 abstracts were found. 23 full articles were reviewed, following which 8 papers were selected for inclusion. All 4 levels of Kirkpatrick's training hierarchy were evaluated but were generally level 3 and 4 (behaviour and organisation change). Studies were heterogenous and outcomes generally related to prescription practice rather than patient outcome.

Conclusions: A surprisingly small number of studies have been performed on educational interventions which improve healthcare professionals' assessment and management of children with fever.

Take-home messages: There were no common features of strategies which are effective and further research in this area is urgently needed.

6Z/9

Gender knowledge in medicine: still a long way to go!

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Background: In clinical practice gender differences are often not adequately considered leading to suboptimal treatment in a variety of diseases.

Summary of work: Gender knowledge was assessed using a 19 MCQs based gender quiz at the German medical faculties of Muenster (M) and Duisburg-Essen (DE) involving medical students, physicians and scientists of different educational / professional levels. This study is intended to serve as a needs analysis according to Kern for future integration of gender aspects in medical curricular.

Summary of results: In total 1448 medical students (64.0 % female) and 605 physicians/scientists (49.9 % female) took part in the survey. Overall only about half of the questions were answered correctly with no differences between students and professionals (students: 52.5 %; physicians/scientists 51.9 % correct answers) and no difference between sites (M, DE). Physicians reached significantly higher scores compared to scientist (56.8 % vs. 44.8 %, p < 0.05). Students' gender knowledge increased with increasing academic year up to 59.1 % in final year students.

Conclusions: This study clearly demonstrates a deficiency in gender knowledge in medical students and physicians / scientists.

Take-home messages: Gender aspects have to become integral part of medical undergraduate curricular.

6Z/10

Integration of Gender-related knowledge and skills into the organ and body system modules of the new medical curriculum at Charité Berlin

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Background: The 3rd and 4th semester of the new integrated curriculum of medicine at Charité – Universitätsmedizin Berlin comprise 8 modules assigned to teaching and learning on main human organ and body systems. The aim was to integrate Gender-related issues and concepts into the curricular design process of these modules.

Summary of work: Knowledge and skills relevant to Gender aspects were systematically identified prior module planning. During faculty-wide planning of the modules, integration of gender issues was achieved by constant and multilateral discussions and consultations of the module planning group, individual course planners, module chairmen and during the module reviews by the curriculum committee.

Summary of results: Compulsory gender-related courses, gender-related knowledge and skills and gender-sensitive language were widely implemented in all teaching formats ranging from lectures and seminars to clinical skills courses, problem-based learning and communication trainings.

Conclusions: Gender medicine issues can successfully be implemented into a new curriculum when relevant aspects are placed in a manner targeted to the general curriculum design process and close discussion and consulting is provided to the faculty members during all steps of the curricular planning process.

Take-home messages: Pinpointed placement and close counselling facilitates integration of Gender-related issues into a medical curriculum.

6Z/11

A Quantitative Study of the UK Undergraduate Orthopaedic Curriculum

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Background: Knowledge of musculoskeletal disorders is crucial, regardless of interest in specialization.

Summary of work: Questionnaires were distributed to meeting delegates. The questions examined elements in clinical knowledge, skills and exposure in their medical undergraduate training. Data on the level of training, completion of the musculoskeletal module and interest in specialty were included.

Summary of results: 72%(54) questionnaires were returned. On average, 37%(20) felt Orthopaedics was not covered sufficiently. Considerable areas of weakness were identified in core topics. 67%(36) were not confident in assessing open fractures. 35%(19) felt they lacked anatomy knowledge. 59%(32) were not confident in evaluating and managing musculoskeletal disorders. Those not considering specializing in Orthopaedics had less exposure.

Conclusions: Coverage of fundamental topics is lacking, and is far from global recommendations for undergraduate musculoskeletal curriculum. This has been demonstrated in Asia and America, but not in UK to date.

Take-home messages: Reformation of the musculoskeletal module is necessary for all trainees to be competent in this area, regardless of interest in specialization.

6Z/12
Disaster Management workshop as a tool of learning for Health professionals

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Background: Disaster management has traditionally consisted of preparedness for efficient and centralized emergency response, not the development of localized preparedness capacity. Faculty at Shifa college of Medicine felt a need of introducing disaster preparedness workshop at undergraduate level, to provide future health professionals an opportunity to consider specific disaster preparedness measures and actions that would improve the state of disaster preparedness in their country.

Summary of work: One day workshop was introduced. 150 students both from 3rd and 4th year MBBS participated. Lecture was delivered in collaboration with NDMA Pakistan, followed by small group activity focusing on real case scenarios with participants imagining themselves as part of disaster preparedness committee. Each group had group presentations.

Summary of results: Pre and post evaluation was done through questionnaire. Of the 150 questionnaires, 90 were returned. Marks were assigned. In pre evaluation 44% and in post evaluation 77% were able to answer correctly showing improved knowledge by almost 70%.

Conclusions: Towards the end some participants wanted further clarification on certain terms and a need of simulation based activities was felt.

Take-home messages: Disaster preparedness is a continuous and integrated process resulting from a wide range of activities rather than a distinct sectoral activity.

6Z/13
Competence-based approach to learning biostatistics in medical school

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Background: Modern medical education aims not only to provide the required knowledge to students, but rather form the competence in learners. This requires introduction of new approaches to teaching and learning even in such discipline as biostatistics.

Summary of work: When studying biostatistics our students choose whether they want to be involved in mini-research project during their individual study time. The students become researchers on their own – propose the research question, choose statistical methods, interpret results and make conclusions. This allows them to form the research competency, improve communication skills, biomedical knowledge, and public health management skills.

Summary of results: We compared the academic progress and satisfaction of students in biostatistics who chose mini-research with those who decided to write an essay. There were no significant differences in academic progress, but the survey revealed that students who participated in research were more satisfied, understood statistical concepts better, and had to recall previous knowledge gained in studying other disciplines.

Conclusions: Competence-based approach to teaching biostatistics improves students' satisfaction and promotes deeper learning strategies.

Take-home messages: Participation in mini-research project during individual study-time in biostatistics may be recommended to increase the interest of students and form professional competence required from future doctor.

6Z/14
A pilot study of a teaching model in family medicine for undergraduate medical students at Comenius University in Bratislava, Jessenius Faculty of Medicine in Martin, Slovakia

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Lubica Jakusova (*Comenius University in Bratislava, Jessenius Faculty of Medicine in Martin, Clinic of Children and Adolescents, Martin, Slovakia*)

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Background: Family medicine inclusion in medical school curriculum is essential for producing competent general practitioners. The aim is a pilot study of a teaching model in family medicine for undergraduate medical students at Comenius University in Bratislava, Jessenius Faculty of Medicine in Martin, Slovakia.

Summary of work: A teaching model in family medicine was developed in our conditions. Participants were medical students enrolled in the fifth year of the study. The study took place at Comenius University in Bratislava, Jessenius Faculty of Medicine in Martin, Slovakia during the academic year 2011–2012.

Summary of results: The primary endpoints are to launch practical part of family medicine subject, improve knowledge of family medicine and develop essential performance skills. Assessment of this pilot study model by participating undergraduate students will help us with the future improvement of planning, organization and implementation of family medicine subject study.

Conclusions: A new subject family medicine is essential for all undergraduate medical students at Comenius University in Bratislava, Jessenius Faculty of Medicine in Martin, Slovakia. The practical part of the subject family medicine is implemented by various relevant departments and local general practitioners.

Take-home messages: Importance of co-operation in family medicine teaching model.

6Z/15
Students' perception assessment in spiral model from basic science to clinical application: Experience of KUB physiology in PBL curriculum at the Faculty of Medicine, Thammasat University

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(*Presenter:* Sophapun Ekarattanawong, Faculty of Medicine, Thammasat University, Department of Physiology, Pathumthani 12121, Thailand, sophapun@hotmail.com)

Background: This study was to elucidate whether KUB physiology in the 2nd year faculty-revised curriculum could be spiraled for clinical application in the 3rd year level.

Summary of work: Third year preclinical students and tutors were assigned a questionnaire after completing their tutorial session in each KUB spirally blocks both in the 1st and 2nd semesters. The questionnaire comprised of ten student's self-evaluation and tutor's opinion in student's capability using KUB physiology knowledge for analyzing problem with a five rating scale. The data was analyzed using independence sample t-test and ANOVA.

Summary of results: 98% (n = 105) and 70% (n = 13) of students and tutors responded, respectively. The students significantly evaluated themselves for their effectiveness to clinically applied KUB contents to be much lower than those of the tutors (p-value <0.001).

Conclusions: The results conferred that spiral curriculum of KUB physiology concept would be much more effective in clinical application in the semester before clinical year.

Take-home messages: The assessment should subsequently be performed in the clinical year level to reassure the effectiveness of our spiral curriculum.

6AA   Posters: Clinical Teaching 2

6AA/1
Student attitude towards difficulty of learning in Pediatric Cardiology

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Background: Pediatric cardiology is one of the most difficult and problematic learning in pediatric fields. Attitude plays an important role in learning outcomes. This study aims to identify association between students' attitudes and learning outcomes.

Summary of work: Thirty fourth-year medical students were enrolled. Learning outcomes were defined using test score composed of 7 multiple-choice questions, 3 heart-sound listening examination. Test outcome was re-categorized as binary variable, consisting of "pass", if score ≥ 5, or "fail", if score <5. Attitude questionnaires consist of 30 items using 5-piont Likert scale format. Attitudes were classified into 5 categories: self confidence and learning motivation, subject interesting and importance, subject difficulties, teacher and teaching impression, chance to practicing on patients. T-test statistic was used to compare attitude score with alpha=0.05.

Summary of results: Attitude of subject difficulty was higher mean score than remaining categories and was only category that shows significant difference between pass and failed groups with a p-value of 0.04.

Conclusions: The study reveals evidence indicating that attitude on difficulty of pediatric cardiology was an important factor on learning. Attitudes towards self-confidence and learning motivation, interesting subjects, teaching styles and chance of practicing on patients were not associated with final scores.

Take-home messages: Learning of difficult subjects was influenced by students' attitude.

TUESDAY 28 AUGUST 2012

6AA/2
Relation of Preclinical Practice to Clinical Training in Occupational Therapy Education

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Background: We investigate effectiveness of preclinical training on clinical training for better OT education.
Summary of work: Subjects were 152 OT students. For practice before clinical training, a pair of examiner and examinee (patient) took part in role-play. The examiner conducted tests along a test-card with 10 test items (MMT, sensory test, etc.). Achievement degrees in practice on each test item and self-judgments on each skill, understanding of each skill and disease were scored (ACS). Further, degrees of preparatory practices before pre-clinical practice were also scored (PPS). ACS and PPS were compared with those of clinical training (SOCT) on general instructional objects (GIOs) of 1 plan, 2 evaluation implementation, 3 acquisition of global image, 4 professional attitude, 5 records with reports, and 6 self-control.
Summary of results: SOCT GIO 1~4 vs. ACS C6-remaining function, GIO 4 and 6 vs. sensory test and GIO 4, 5 and total were correlated (r=0.25~0.42). GIO 1 and 3 were correlated with scores of self-judgment on understanding of diseases like rheumatoid and others (r=0.30~0.42). High PPS correlated to GIO 2 and 6 (P<0.05).
Conclusions: More preparatory practices lead to promote self-evaluation for skills, then to success in clinical training.
Take-home messages: More practice will lead to more success in clinical training.

6AA/3
Introduction of medical students to emergency care

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Tamara De Nardo Vanzela (*Universidade Estadual de Maringá, Medicina, Maringá, Brazil*)
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Background: Evaluate the participation of the 4th year medical students in an educational project about emergency medical care at the University Hospital.
Summary of work: An educational project was created for medical students of the 4th year to help prepare them for clinical and traumatic emergency situations. Students answered a questionnaire to evaluate their participation.
Summary of results: Analysis of the questionnaire indicated that they attended the project to become more skilful and self-confident in emergency situations; they intended to acquire knowledge to attend two last years of medical school; they wished to improve their relationship with the patient. Lack of support from the doctors in the Emergency Unit and absence of medical care standards were considered the most serious problems. All students think the project is an opportunity to experience emergency medical situations.
Conclusions: The educational project is an opportunity for students to face medical emergency situations. It can promote creation of standards for medical care in the Emergency Unit and improve the relationship between doctor and patient.
Take-home messages: Medical students can experience emergency medical situations.

6AA/4
The result of a clinical immersion program for medical students of Prince of Songkla University, Thailand

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Background: Experienced teacher support for medical students making the transition from theoretical learning to clinical doctor can be essential to successful and smooth adjustment.
Summary of work: We describe a three week study at the end of second year for medical students trained at the Prince of Songkhla University. A collaborative program with the 41 rural southern Thailand hospitals was developed. 181 students were assessed on preparedness as a medical clinician after the learning period.
Summary of results: Results indicated an increase in satisfaction across the entire sample. Qualitative findings indicated that one of the main benefits was the sense of belonging to a community that understood their learning needs.
Conclusions: The students suggested the importance of belonging to an environment where their skills and knowledge could be constructively developed. Besides the standard education, the students tended to be more confident at baseline before admission to preclinical learning, suggesting that the study was better suited for students to gain more challenging styles of clinical experiences.
Take-home messages: The experience related to those aspects that the students found in the transition process with a positive and sympathetic clinical learning environment. The students are encouraged to consider their preferred learning styles when applying for further clinical learning.

6AA/5
The factors influencing clinical learning of nursing students: A qualitative research study

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Background: Training in clinical centers provides the students with opportunities to experience nursing in the real world and put theoretical knowledge into practice. Although the clinical learning process is a basic concept in preparing the nursing students for clinical environment practice, there is only a limited knowledge of factors affecting it in Iranian clinical environment. This research aims at gaining in-depth understanding of the factors affecting the clinical learning of nursing students regarding their situation and the organization structure of Iranian clinical environment.
Summary of work: The participants in this qualitative study were 19 nursing students of Zanjan University of Medical Sciences (ZUMS). The data was collected through semi-structured in depth interviews. Content analysis was used to analyze the data. The interviews were scripted verbatim and analyzed concurrently.
Summary of results: Three main themes were recognized through analyzing the data. The main themes affecting the clinical learning of nursing students included clinical learning environment, educational behavior of clinical instructors, and students' personal factors.
Conclusions: Deeper understanding of the factors affecting the clinical learning process of the students and its outcome, drawing the educational managers' attention, and clinical instructors and students to the facilitating factors, and reducing or controlling the inhibiting factors will result in improved learning in students, and put the educational managers and clinical teachers in a better situation for clinical training.
Take-home messages: The research results provide an in depth understanding of nursing students' clinical experiences in Iran.

6AA/6
The number of times that medical students need to practice to achieve optimal competency in short arm casting

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Background: Sixth year medical students are taught principles and procedures for short arm casting. They practice short arm casting with their peer students and simulating patients under close supervision. There is, however, little evidence to suggest the number of times students need to practice to achieve optimal competency in short arm casting.
Summary of work: Forty-one sixth year medical students in the 2011 academic year were divided into two groups: those allowed to practice short arm casting as frequently as they preferred (Student preference group) and those required to practice at least 3 to 5 times (Compulsory group). After six weeks of training, students' short arm casting skill was assessed as competency scores using casting checklist by the clinical instructors.
Summary of results: The number (interquartile range) of times students practice was 5 (3-8) and 3(1-6) for Compulsory and Student preference groups respectively. The average competency score (standard deviation) was higher in Compulsory group than Student preference group (16.4 (1.9) and 14.7(1.8) respectively, p=0.006). Competency scores increased with the increasing numbers of times students practiced, with a level-off after 5 times of practicing.
Conclusions: Practicing short arm casting five times may be considered a student's minimal requirement to achieve optimal competency.
Take-home messages: Practice makes perfect.

6AA/7
Refresher course on Neonatal resuscitation program: what is the most effective method?

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Background: The proficiency of neonatal resuscitation of learners deteriorates rapidly with time after training and their confidence declines in the actual setting, so it is neccessary to have a refresher course. This study aims to evaluate the effectiveness of refresher courses with self-studied hands-on practice on neonatal resuscitation skills.
Summary of work: The 39 medical students who completed the neonatal resuscitation course were recruited. The instructor reviewed contents in a brief lecture, then the students were divided into 2 groups. The first group(n=20) practiced skills with an instructor and the second group(n=19) reviewed videos and performed hands-on practice themselves. Both of them underwent simulation-based scenarios and debriefing. The scenarios were taped and scored. MCQ and questionaires measuring confidence before and after the refresher course were done.
Summary of results: There was no significant difference between the groups in GPA and pre-test scores. The post-test scores showed significant improvement in all learners and were not significantly different in both groups. The technical skills in simulation-base scenarios of participants who practiced technical skills using different methods were not significantly different.
Conclusions: Refresher course is needed to improve the cognitive, technical and teamwork and communication skills of neonatal resuscitation. Self-studied hands-on practice is an option for refreshing technical skills, but the simulation-based scenario and debriefing is necessary to integrate their skills in real life and gives them more confidence.
Take-home messages: The refresher course on neonatal resuscitation must pay attention to cognitive, technical and

teamwork and communication skills. The simulation-based scenario and debriefing is the most important part.

6AA/8
Feedback, Learning Curve and Skills Improvement in Neonatal Resuscitation

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Background: Neonatal resuscitation (NR) skills are essential for doctors. Feedback on the occurrence of adverse events (AE) after practice during the studentship is one way of learning improvement. The objective was to assess students' learning curve in NR after feedback was given after AE occurrence.
Summary of work: This longitudinal study was conducted in 158 sixth year medical student from 2006-2010. NR was performed under the supervision of pediatric residents or interns after lecture and practicing with mannequin. The supervisors reported and scored students' performance regarding equipment preparedness and their procedure. In the AE occurrence, direct feedback was given to each individual.
Summary of results: The median of chance to practice NR was 4 (interquartile range 3-7). At the 7th time, they were able to complete the equipment preparedness. At the 4th time, they could perform all NR procedures correctly and 100% completeness of both equipment preparedness and correct resuscitation at the 7th time. Those with given feedback could shorten the learning curve and gained higher score.
Conclusions: Repeated practice at least 7 times and feedback can enhance the learning curve in NR skills.
Take-home messages: Allowing medical student to practice in real situation must be under close supervision to minimize patient risk.

6AA/9
The Patients as Educators (PAE) program - The Sheffield Model

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Background: The Patients as Educators program demonstrates a commitment to help undergraduate medical students by providing them the opportunity to see a wide variety of patients with existing medical conditions and physical signs.
Traditionally medical students see patients in outpatient clinics, general practice or as inpatients, however these days shorter hospital stays and increasing student numbers are important variables which limit the opportunities for students to see certain types of patients.
Summary of work: During supervised sessions students obtain clinical histories from patients, carry out physical examinations and undertake clinical skills. The PAE group are also actively involved in a wide variety of assessments undertaken by medical students. The PAE group help the students learn communication skills and professional attitudes and provide feedback to the participating students.
Summary of results: The students' and patients' evaluation of has demonstrated the efficacy of the PAE program. The program has been well received by medical students, facilitators, doctors and the Patient as Educators group.
Conclusions: The PAE program provides essential support to existing clinical teaching and assessments, and promotes an active role for patients in the process of medical education.
Take-home messages: The PAE program provides medical students an opportunity to interact with a wide variety of patients with existing clinical conditions and physical signs.

6AA/10
A qualitative national study of nurses' clinical knowledge development of pain in Pediatric Intensive Care

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Background: How signs of pain are learned in clinical practice might be one of the remaining aspects in nurses' insufficient pain alleviation. However little is known about nurses' clinical learning patterns or collegial facilitation within the PICU. These assumptions lead to the aim of the study: to elucidate patterns in clinical knowledge development and unfold the role of facilitator nurses in relation to pain management in the PICU.
Summary of work: The study had a qualitative interpretive design approach using semi-structured interviews, analyzed with qualitative content analysis to elucidate both manifest and latent content.
Summary of results: Knowledge development within practice is closely connected to the workplace culture and to

nurses' significant networks and nurses needs to feel safe in the to build and rely on significant networks.

Conclusions: To increase the possibility of pain alleviation in the clinical setting, it is of importance to attend to the caring culture and build a safe collaborative culture that is patient centered. This requires an environment that allows for open discussion, where questioning and reflecting is a natural part of the culture within the group. These factors need highlighting and thorough examination from the organization.

Take-home messages: Support nurses' appropriate use of pain expertise through constructive collaboration with colleagues and experts from other professions in health care.

6AA/11
"Practice makes perfect": Reinforcement as a teaching method for clinical examinations

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Background: Research shows learning is a psychological process, influenced by students' aptitude, environment and instruction received. A popular teaching method amongst behavioural psychologists is reinforcement. Through repeated demonstration, practice and feedback, information is learnt and stored in long-term memory. However its role in medical education is currently unclear.

Summary of work: Two teaching programmes on clinical examinations were devised for 3rd year students at Canterbury Hospital. Students were randomised to two groups. Both received weekly lectures with instructors demonstrating the examination, then observing students practice. Group 1 were additionally assigned mentors who reinforced the information later that week, allowing students to re-practice. A mock OSCE was held with results between the groups compared to assess the influence of reinforcement. Feedback forms provided further qualitative data.

Summary of results: Mock OSCE results for group 1 were promising with positive feedback received. Students commented on the benefits of re-practicing examination skills with mentors as it consolidated their learning and provided them feedback on their progress. Results from group 2 are pending examination in March 2012.

Conclusions: Reinforcement is useful in medical education, particularly for practical skills. It improves students technical ability helping them prepare for exams.

Take-home messages: Reinforcement works.

6AA/12
Use of a workshop-based program to teach electrocardiogram (ECG) interpretation skills to undergraduate medical students

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Background: ECG interpretation is considered a difficult skill to acquire by medical students. The optimal techniques to teach these skills remain unclear. A number of methods have been proposed including a workshop-based program designed to improve competence and confidence. We aimed to evaluate this model on students at our hospital.

Summary of work: 24 third-year medical students participated in the workshop. An introductory lecture was followed by a break-out session with small-group case discussions facilitated by a foundation doctor. Students completed a 10-item ECG questionnaire both pre and post-workshop and marked their confidence with each question. Evaluation of the workshop was assessed using a 5-point Likert scale.

Summary of results: Students strongly agreed that the workshop was useful, enjoyed the break-out sessions and wanted similar workshops to teach other clinical skills (67%, 71% and 91% respectively). There was a significant difference in mean pre and post-workshop questionnaire scores (42.5% vs. 68.3%; p=0.015). In addition, mean confidence scores also increased (p=0.015). In addition, mean confidence scores also increased (0.4 vs. 17.2; p<0.00005).

Conclusions: Students were able to correctly interpret ECGs with greater accuracy and confidence after attending this workshop.

Take-home messages: A workshop-based program is a useful method to train and increase the confidence of students in ECG interpretation.

6AA/13
Evaluation and future planning of what should be taught to medical student of controlling traumatic epistaxis

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Background: Controlling traumatic epistaxis by anterior nasal packing was once essential skill for general physician who learned this technique from model and demonstration during clinical years. It should be done before starting resuscitation.

Summary of work: Review of 51 admitted injured patients of nasal fracture in Sawanpracharak hospital in 2011. All cases

had history of epistaxis and only 2 cases presented active nasal hemorrhage which were controlled by cold compression on arrival. 22 cases were referred from rural hospitals, 10 cases with anterior nasal packing which were removed before definitive surgery, the gauze which occupied just posterior to each nostril sill were measured of 8 – 10 inches length compared to 42 operated cases of close reduction under general anesthesia whom were packed with gauze of 60 – 80 inches length.

Summary of results: Nasal hemorrhage stopped spontaneously 39 cases and were controlled by either cold compression 2 cases or loosely packing without local pressure 10 cases.

Conclusions: Correct anterior nasal packing should be placed in bilateral whole nasal cavities to compress and stabilize nasal septum and bones with direct pressure that need to stop bleeding. It hurt patient and caused noncooperation when it was done under local anesthesia as referral cases even it could stop bleeding the same as non treated and cold compression cases.

Take-home messages: An effective technique of controlling traumatic epistaxis by cold compression is simple and should be taught as first line of management to medical student instead of anterior nasal packing.

6BB Posters: Feedback and Online Assessment

6BB/1
Developing feedback skills in junior doctors during a mock PACES examination

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Background: Junior doctors play a vital role in educating medical students; consequently, giving feedback effectively is of fundamental importance. However, formal opportunities to practice these skill are rare.

Summary of work: Twenty-four foundation year doctors were recruited as examiners in a mock PACES (Practical Assessment of Clinical Examination Skills) examination for final year medical students. Prior to the start of the mock, examiners received brief, targeted training on giving effective feedback. Each station lasted 10 minutes, with the addition of two minutes for verbal feedback from the examining doctor, which was reinforced by a written assessment form. Following the exam, both the doctors (n = 23) and the students (n = 72) completed anonymous questionnaires assessing the value of the feedback.

Summary of results: 93% of responding students felt that feedback received was useful or very useful. 96% of doctors felt their skills in giving feedback had improved, and 91% found the initial training useful in aiding their technique.

Conclusions: Junior doctors play a key role in teaching medical students; mock examinations are a useful environment for improving their feedback skills immediately following training.

6BB/2
Online topic-based formative feedback versus online question-based formative feedback: a comparative analysis

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Background: We showed previously that online objective testing can provide feedback to enhance learning. However, this type of feedback may reduce future e-assessment utility and may not promote the deepest form of learning. Therefore, we investigated the impact of changing from question-based feedback to topic-based feedback on student progress, usage and perceptions.

Summary of work: A formative e-assessment providing topic-based feedback was delivered online to students in our thin client technology e-assessment suite and was subsequently made available via our Virtual Learning Environment in the period leading up to a summative assessment. The impact of the topic-based feedback on progress was then analysed together with access patterns, perceptions and attitudes.

Summary of results: Students valued the topic-based feedback and engagement was significantly increased compared with e-assessments providing question-based feedback. Student progress in the summative assessment correlated with the number of attempts, with five leading to the most progress and the weaker students making the most progress overall.

Conclusions: Online topic-based feedback successfully replaced question-based feedback, thus increasing the future utility of e-assessments and giving weaker students greater opportunity to make progress with their learning. We have embedded this type of e-assessment across our programme.

Take-home messages: Online formative e-assessments providing topic-based feedback can successfully replace question-based formative feedback for learning.

6BB/3
Carpe Diem: post exam - a missed opportunity for collaborative learning?

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Background: Traditional multiple choice (MCQ) exams for large groups miss an opportunity to learn when student motivation to understand content is high.

Summary of work: A reflective exercise was designed on validated learning principles: context, collaboration and self-direction. Pharmacy students were grouped immediately following their MCQ exam to discuss 5-10 questions they believed they got wrong for 10-15 minutes. Students individually resubmitted answers and completed a survey.

Summary of results: The majority wanted to repeat and continue the activity for subsequent cohorts (93 and 99%). Most felt it increased time spent verifying responses, reconsidering study strategies and discussing with peers (64, 66 and 77%). Peer collaboration enabled identification of 1.6 new mistakes, re-categorization of 44% of mistakes as correct responses, and generated new explanations for 26% of mistakes. Benefits of the activity as highlighted by survey and focus groups results included its immediacy, peer collaboration, stress relief and learning around new approaches to questions.

Conclusions: Formal learning exercises post MCQ exams are feasible and well received as an occasion for collaborative learning.

Take-home messages: Educators, especially of self-regulating professionals, should harness learning opportunities around reflective assessments; the post exam setting is an opportune time for collaboration where student knowledge is crowning.

6BB/4
Is valid criticism the elephant in the corner?

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Background: Delivering feedback using Pendletons' rules requires discussing "what went well" before moving onto areas for improvement. Is this standard in medical education useful?

Summary of work: Triangulation of data from a trainee focus group (n=11), with Likert scale targeted questionnaire of anaesthetic consultants (n=26).

Summary of results: Trainees wanted constructive negative feedback, with suggestions for improvement and felt obligatory praise diluted the real message. In contrast, consultants felt trainees can be defensive when receiving constructive criticism and wanted further training on delivering negative feedback.

Conclusions: Trainees value constructive criticism but often don't experience it. Trainers feel it can be received badly and recognise its delivery as an area for personal improvement. This could either reflect failure of Pendletons' rules or educators ineffective implementation of them, either through avoiding addressing real issues or attempting to give unnecessary development points.

Take-home messages: The complex issue of delivering valid criticism needs to be addressed head on to stop it being the elephant in the corner.

6BB/5
Barriers to Feedback: Are Consultants & Trainees on the Same Wavelength?

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Background: Feedback provides trainees with insight into their personal learning experience and guidance on positively modifying their skills and behaviour. With such wide-reaching potential benefits, why is feedback sometimes neglected or actively avoided?

Summary of work: Trainees: transcription and analysis of qualitative focus group (n=11), preset discussion points. Consultants: focussed questionnaire (26 responses, 87% response rate), equally weighted Likert scale and free text section.

Summary of results: All consultants gave feedback, however trainees struggled to recall specific episodes. Consultants considered positive role models the best source of feedback, whereas trainees more appreciated clinical expertise. Both groups agreed that feedback can be inconsistent, more reflecting personal opinion. Time pressure and lack of mentorship were acknowledged by both groups. Some consultants withheld feedback fearing upsetting the trainee, however trainees welcomed anything constructive. Consultants prefer to analyse specific skills, whereas trainees also desired general feedback relating to their behaviour and training progression.

Conclusions: Hesketh & Laidlaw identified seven barriers to feedback in 2002, and despite the unique teaching environment in anaesthetics, most are still prevalent.

Take-home messages: Barriers to feedback can be significant - greater training in giving and receiving feedback would be welcomed.

6BB/6
Consultants' perceptions of the use and usefulness of placement assessment forms: An exploratory study

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Background: Feedback is essential for enhancing learning and driving clinical performance. However, it is often poorly formulated or delivered, and students report dissatisfaction. A neglected area of research is the perceptions of those who give rather than receive feedback. Furthermore, we do not know whether contemporary assessment instruments aid or inhibit feedback. This study explored doctors' approaches to providing feedback to medical students upon completion of their clinical attachments, using the current proforma designed for this purpose. This includes attributes graded as "pass" or "fail" and free text for written feedback.
Summary of work: Brief semi-structured interviews were audio-recorded, transcribed verbatim and analysed using thematic analysis.
Summary of results: Results highlighted concerns about insufficiently acknowledging good performance and mixed perspectives on the purposes of written feedback. Whilst doctors welcomed the inclusion of a free text section, written feedback was rarely given in practice. Reasons cited included time constraints and fear of upsetting the student.
Conclusions: This study highlights the sensitive and controversial nature of giving feedback.

6BB/7
What do third year medical students find useful when receiving peer feedback after taking a clinical history?

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Background: Research suggests that students find the promptness and volume of peer feedback useful (Norcini, 2003). However there is no study looking specifically at the content of peer feedback, and what components of it are found useful. This UK medical school has incorporated peer feedback into a Student Selected Component (SSC) in the third year of the undergraduate medicine programme. This SSC involved students taking a clinical history from a patient whilst being observed by a peer who filled in a peer feedback form. The student taking the history reviewed the feedback and reflected on it.
Summary of work: A random sample of 30 written reflections were analysed using a Framework analysis to highlight what students found useful and less useful. A

random sample of 50 peer feedback forms were thematically analysed.
Summary of results: Interim findings suggest that peer feedback is mainly observational, rather than constructive. However, it is suggested that students do value these observations.
Conclusions: Peer feedback is useful, and should be used more and with faculty support. However, more feedback training is needed for students to give constructive comments.
Take-home messages: Peer feedback is useful for reflective training and could be incorporated into medical education more. However, more training is needed for students providing peer feedback.

6BB/8
What do new undergraduate medical and veterinary students understand by the term feedback? Does a year of education affect their views?

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Background: This study looked at which activities new students considered to be feedback and whether this changed after a year. Staff put effort into providing feedback and yet student evaluations of feedback are low. This is of pedagogical and reputational concern. UK universities' reputations are closely linked to their scores on the National Student Survey (NSS). Feedback is one of the lowest rated categories on the NSS.
Summary of work: A questionnaire was administered to first year undergraduate students at SGUL and the RVC (n=399). It comprised 11 closed questions on definitions and usefulness of feedback and 2 open questions exploring previous experience and expectations of university. The questionnaire was repeated at SGUL with the same cohort in year 2, using the same closed questions and new open questions on the experience of first year (n=182). Focus groups provided qualitative data.
Summary of results: Students were more likely to consider activities that were both direct and personal as feedback. Previous experience of feedback has a complex relationship to current perceptions, influencing expectations of both difference and similarity. Similar results were obtained in year 2.
Conclusions: Students' definitions of feedback may differ from staff definitions.
Take-home messages: Address this via explicit teaching on forms and uses of feedback.
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6BB/9
The integration of PHS with web-based feedback to promote mutual feedback in clinical medical education

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Background: Feedback constitutes an essential component in medical education. Trainees desire more frequent and periodic feedback from preceptors in order to improve their performance, but little or no feedback may occur. More preceptors would also like to provide an effective and timely feedback, which is often interrupted by the busy clinical situation.
Summary of work: In recent four years, we developed a web-based feedback system integrated with the personal handy-phone system (PHS) to promote mutual feedback between medical trainers and trainees.
Summary of results: Using this system, 54498 instances of feedback were given to 1468 medical students from July, 2008 to June, 2011. Inadequate performance was recognized in 230 students (15.7%). After supplemental education, 202 students (87.8%) were considered to be qualified again.
Conclusions: The integration of PHS with web-based feedback could effectively promote mutual feedback, especially in a busy clinical scenario. It could also serve as an alarm to provide a timely supplemental education in trainees with inadequate performance.
Take-home messages: A delicate integration of current PHS and on-line system could provide another useful tool for educational feedback.

6BB/10
Development of multiple choice question (MCQ) pool software

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Background: Whereas multiple choice question (MCQ) test is one of the best assessments for medical students, collection of the items is needed for creation of a test in each examination. MCQ items sent by medical teachers should be confirmed by the medical assessment committee. Then selection of MCQ items depending on topics and subtopics should be done for each new test. All these tasks should gain benefits from an online software as pooling of MCQ items for medical teachers.
Summary of work: 5 options one best answer MCQ pool software is designed for working online all of the tasks in creation of MCQ test including sending, editing, confirmation, collecting and selecting items. Development tools include PHPMaker 9.0.2, PHP scripts and MySQL database.
Summary of results: An online web application for MCQ pool is developed with full features including the following tasks: sending items from medical teachers, editing and confirmation by medical assessment committee, selecting items depend on varying amount needed by designed topic and subtopic, re-arranging options within each items, creating of MCQ test for a new examination and advanced security for working online securely.
Conclusions: An online web-based application for working with MCQ test should help medical teachers creating there MCQ test easily and rapidly with reliable and advanced security.
Take-home messages: This MCQ pool software will be released as GPL open source application soon. Public collaboration in development of the tool should be benefits for all of medical teachers.

6CC e-Posters: Virtual Patients and eCase Studies

6CC/1
Virtual Patients with Rare Diseases: good for health professionals and good for patients

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Background: Most Virtual Patients (VP) are aimed for health professionals. At the University of Southampton we developed a VP, which supports learning about rare diseases to health professionals and patients/relatives/friends/carers. Illustrating the emotional impact on the patients and those who treat and care for them, it presents core concepts of a rare disease. 'Sam', a patient newly diagnosed with Pompe's disease (a rare disorder of glycogen storage), was approached for this VP development.
Summary of work: Developed based around interviews with Sam, illustrating her medical, emotional and on-going journey, the VP (www.soton.ac.uk/pompe/) integrates core concepts of Pompe's disease. With an embedded questionnaire to investigate its effectiveness, it was

introduced to undergraduate students and made available via Internet in October 2011.

Summary of results: 780 visits to the VP were recorded, and19 users, from the mother of a child patient to a Consultant Neurologist, completed the questionnaire. The feedback received was positive. Healthcare professionals appreciated its concise and informative nature, and patients/friends/relatives benefited from the contextualised information presented through Sam's journey.

Conclusions: Initial results suggest that this type of VP facilitates learning of rare conditions in a meaningful and relevant way to different users.

Take-home messages: More VPs, which support learning of rare diseases for health professionals and patients/friends/relatives, are recommended.

6CC/2
Implementing Mobile Apps in Medical School

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Background: St George's has transformed its paper Problem-Based Learning (PBL) cases to online interactive Virtual Patients (VPs). These allow the students to make decisions and learn from the consequences of their choices. A range of assessment VPs were created to support each PBL. The assessment VPs include some assessment features and were designed as self-directed learning cases.

Summary of work: As a result of the proven success in delivering online interactive PBL, St George's investigated several mobile technologies to deliver VPs, and consequently developed a mobile application to deliver assessment VPs. Two versions of app were developed: (i) a public version for medical and healthcare undergraduates and professionals with over 30+ VPs, (ii) a private version containing the assessment VPs exclusively for St George's students.

Summary of results: The private app was released to students in September 2011. The students have welcomed the app; appreciated it for its high quality simulations and have provided feedback such as 'useful' and 'I learnt a lot'. Full analyses of the study and feedback will be presented. The public app was released in January 2012.

Conclusions: St George's mobile app proved a suitable mobile platform for delivering virtual patient simulations, and students highly appreciated this convenient learning tool for learning on the go.

Take-home messages: Virtual patients at St George's prove to be a great success thereby allowing greater exposure to VP through mobile devices gives the students a more personalised and realistic experience.

6CC/3
Modeling Virtual Patients for Learning and Assessment in Nursing Education

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Background: Research studies have shown that nursing students find it difficult to translate and apply their theoretical knowledge in a clinical context. Virtual patients (VPs) have been proposed as a learning activity that can support students in their learning of scientific knowledge and help nursing students integrate theory and practice. Since most reported VPs aimed at the medical curricula, there is a need to investigate how to model VPs for nursing education.

Summary of work: Modeling of the VPs was based the 3rd generation nursing process model, the Outcome Present State-Test (OPT) model. We investigated how the VP model supported nursing students' understanding of scientific knowledge and training in clinical reasoning.

Summary of results: Five VPs were created and implemented in the undergraduate nursing education at Karolinska Institutet. The evaluation showed that the students perceived VPs as an appropriate learning activity to support the development of their clinical reasoning.

Conclusions: Using theory anchored VPs can support nursing students understanding of scientific knowledge and development understanding about patients needs, patient care, nursing solutions and nursing interventions.

Take-home messages: VPs adapted to the nursing paradigm can help nursing students integrate theory and practice and support the development of clinical reasoning skills.

6CC/4
Evolution of the Use of On-Line Virtual Patients in the Internal Medicine Clerkship

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Background: We sought to understand which factors clerkship directors (CDs) consider important in choosing to implement virtual patients (VPs), what implementation strategies they use, and the evolution of these factors.

Summary of work: 2009 and 2011 surveys of North American Medicine CDs.

Summary of results: 43 CDs responded in 2009; 45 in 2011. The proportions who reported using VPs to improve students' knowledge base or differential diagnoses as "somewhat important" or "very important" did not significantly change from 2009 to 2011. The proportions who reported using VPs to compensate for variable patient numbers, diagnoses, or clinical sites as "somewhat important" or "very important" were 74%, 81%, and 74% in 2009, and 40%, 60%, and 56% in 2011 (p= 0.001, 0.04, 0.08, respectively). In 2011, 19% replaced part of the curriculum with VPs, 21% integrated VPs into curricula, and 50% simply added VPs.

Conclusions: The purposes for using VPs have evolved. Educational value remains very important, and use for reducing variation has declined. Adding VPs without modifying existing curricula is still common.

Take-home messages: VP developers should understand the needs of educators, which may change over time. CDs may benefit from more guidance on VP implementation.

6CC/5
Through students' eyes

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Background: Clinical phase medical students log case experiences during a ten month rural immersion using a secure web resource. Ideally, in their logs they identify their learning needs, declare critical thinking and attempt a differential diagnosis. They nominate which study disciplines are invoked and reflect on personal and professional development (PPD).

Summary of work: 8935 recorded scenarios from seventy-eight students in thirteen widely distributed small groups, were analysed for their declared learning. Case scenarios in which students attributed multiple discipline involvement were then transformed into "virtual patients" (VPs) for teaching.

Summary of results: The constructs of these VPs had high face validity for students learning in the same context. The weighting of learning points in the logs, including those missed by students, formed the basis for questions posed during the VP enabling strong formative feedback and error trapping. PPD reflections were used to draw out the doctor "habit of mind" as it matured in the experiential learning of a longitudinal immersion.

Conclusions: VPs grown from the same learning environment as that in which they are applied are effective tools to support clinical student learning where self-direction is a catalyst.

Take-home messages: VPs built from an evidence base can be confidently re-used in varying curriculum roles.

6CC/6
User Acceptance of Virtual Patients

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Background: We studied the willingness of the students in Tampere Medical School to use Virtual Patients (VP) as an optional learning source, i.e. the user acceptance of VPs, during an eight week PBL block.

Summary of work: We studied if individual factors (age, use of Moodle etc.), conditional factors (devices etc.) or perceived usefulness and perceived ease of use explain the usage of VPs. As methods we used a questionnaire and analyzed Moodle log files manually and with a specially written computer program collecting data on the instances, duration and frequencies time of use.

Summary of results: The frequency of using Moodle (r=.680, p<.000) explained 46,5 % and the practice of studying (r=319, p=.001) 33,9 % of the frequency of using VPs. Perceived ease of use was in 5/6 items almost significantly related to the frequency of using VPs and in 3/6 items to the amount of using VPs.

Conclusions: User acceptance appeared to be a process where rejection takes place in degrees. Of 113 students 30 used VPs through the block (acceptance), 29 ceased to use (resigning), 28 glanced (rejection in initial use), and 26 did not open any (rejection of the technology).

Take-home messages: User acceptance data on virtual learning should be used to design tools and environments.

6CC/7
Avatars increased doctor/nurse-child communication and reduced children's anxiety in hospital-treated paediatric patients

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Background: Young children feel stressed in hospital. Children like avatars and cartoons. As drugs administration may cause fear, stress and pain in children, explaining to the children how the doctor and the nurse are going to administer medications using avatars could reduce these symptoms.

Summary of work: We evaluated the effect of explaining the drugs route administration by avatars on the anxiety levels of hospital-treated children. A prospective, aleatorized, controlled study in hospital-treated children (< 6 years old) was done. Clinical stage, diagnostic, surgery/anaesthesia and treatment procedures were recorded. Anxiety (STAIC test) and pain (VAS scale) were recorded before and 5 h after drugs administration.

Summary of results: 426 children (aged 3-6 years, 4.8±1,5 years old, 59% male) treated in the emergency, surgery and intensities care unit were enrolled. The drugs routes administration were oral/nasogastric tube (42%), intramuscular (35%), intravenous (20%), inhalatory (1,5%), intrathecal (1%), others (0.5%). Anxiety and pain were higher (p<0.05) in control than in avatar-drugs explained group (8.2±3.1 vs. 5.1±1 and 5.6±0.5 vs. 3.2±0.3, respectively). Control group wept, complained, and called their parents during more time than avatar-drugs explained group.

Conclusions: The use of avatars to explain the drugs routes administration to hospital-treated paediatric patients increased doctor/nurse-child communication and reduced children's anxiety.

Take-home messages: Avatars increased doctor/nurse-child communication.

6CC/8
Attitudes of trainee physicians to online education

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Background: The Royal College of Physicians of Ireland (RCPI) develops and delivers online postgraduate training regularly. This investigation is aimed at examining the efficacy of online modules.

Summary of work: A survey of Higher Specialist Training trainees' attitudes was completed. A 38-item questionnaire was designed and distributed to 121 trainees of which 112 questionnaires were completed. The items focused on demographics, online usage and online education experiences and attitudes.

Summary of results: Qualitative and qualitative data is currently being processed. Trends will be identified.

Conclusions: Research explored indicates that there are a number of areas that need to be addressed in relation to online education. One significant area of interest is time efficiency. Online education has been seen as a method of minimising classroom and travel time for trainee physicians. However it appears it is having a negative effect as hospitals are not recognising online education for study leave. The research should further confirm these findings. It is expected the research will also identify recommendations to improve the development and delivery of online education to trainee physicians.

Take-home messages: Online education has potential and implications for trainee physicians. It is important that educators consider these issues when developing and delivering online education.

6CC/9
Improvement of students' reflective skills by using e-portfolio during the Family medicine course

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Background: During the final year of 6-year undergraduate medical curriculum of School of Medicine, University of Zagreb students spend 6 weeks (140 hours) at family medicine course. During this course students spend 60 hours in theoretical educational and 80 hours (15 days) in selected family medicine practices and participate in the practical work supervised by mentors.

Summary of work: After defining learning outcomes, programme duration and plan the teachers, academic staff, mentors and students who are involved in the family medicine course agreed on the structure of e-portfolio.

Summary of results: E-portfolio contains data on practice characteristics, administrative and legislative obligations of family physician (FP), characteristics of consultation and patient-physician relationship in the family medicine (FM), the role of public health nurses and preventive activities. E-portfolio includes reflection on selected clinical cases seen in practice and actions done independently or with supervision by mentors. E-portfolio is incorporated in the assessment procedure.

Conclusions: E-portfolios are not only a source of information for assessment but help students reflect on their action.Teacher's task is to stimulate students to assess and analyse their actions systematically and critically and formulate alternative actions.

Take-home messages: E-portfolios help students to be self-critical doctors.

6CC/10
Satisfaction of medical cadets in self directed learning using Computer Assisted Instruction (CAI) in Pharmacology

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Background: CAI for some topics in Pharmacology were developed for self-directed learning. Thus, the medical cadets' opinion was investigated in this study.

Summary of work: The 104 questionnaires of each CAI were distributed to third-year preclinical medical cadets who were enrolled in the curriculum during 2011. Each specific question had a possible score of 1 to 5, where 5 indicated strong agreement.

Summary of results: There were 7 specific topics of CAI in the study. In first semester, there were 89 (85.58%) respondents for 3 CAIs and 76 (73.08%) respondents for 1 CAI. Positive attitude were indicated toward all of them (4.56 - 4.16 ,SD 0.62- 0.70). In the second semester, there were 97 (93.27%) respondents for 3 CAIs. Positive attitude was indicated toward all of them (4.50 - 4.36 ,SD 0.60- 0.73) as well. There were suggestions that CAIs for other topic and more quizzes for each topic should be developed as it would be useful to prepare for National License examination. However, there were constraints such as limitation of time for self study and an inconvenience of computer use.

Conclusions: It appeared that CAI seemed to be a teaching method that was accepted by most students.

Take-home messages: However, each topic of CAI should be revised or updated periodically and adequate free time to study CAI should be arranged.

6CC/11
Baby Steps to e-Learning: Rourke Baby Record (RBR) - e-Module

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Background: The Rourke Baby Record (RBR) is an evidence-based health supervision guide for primary healthcare practitioners of children in the first five years. An e-module was proposed, designed, and developed to deliver training to Memorial University's undergraduate medical students.

Summary of work: The project team of two faculty members, a medical student, instructional designers, and multimedia developers began the process to design and develop an e-module that focuses on the 6-month well baby visit, the use of the RBR, and other supporting resources. The design and development goals were two-fold: (1) Design using the most effective student-centered learning strategies: constructivism, simulation, feedback cycles, and multimedia delivery. (2) Develop using the most modern, standardized, and cross-platform web-based technologies: HTML, JavaScript, H.264 video, and SCORM.

Conclusions: The success of this project will lead to the development of additional e-modules to support the remaining patient visits covered in the RBR. Furthermore, the process, lessons learned, and the technologies used will form a framework for future e-learning projects.

6CC/12
Interactive multimedia algorithms for acute medicine teaching and learning

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Background: Educational portal AKUTNE.CZ is a strategic and long-term activity of the Faculty of Medicine at Masaryk University. Its main goal is to innovate teaching of clinical reasoning, especially in the field of acute medicine.

Summary of work: Methodology for the collaborative work of certified physician-teacher with students at the fifth and the sixth grades was prepared. Algorithms were submitted via online forms with the use of a backend web application PHP / MySQL / Flash. For each algorithm, the app generated a unique XML document. This document is rendered on the frontend app into a flash object, which includes a description of the scenarios, links to alternative decisions, additional data on physical and laboratory measurements and finally time-stress factor.

Summary of results: Twelve algorithms were created including following topics: Analgesia in Private Practice, Syncope, Severe Allergic Reaction, Toxic Reaction to Local Anesthesia in Dentistry, Toxic Reactions to local anesthetics, Syncope in Dentistry, Analgesia in Dentistry, Acute coronary syndrome, Water Rescue I, II, Water Rescue , hypothermia, Car Accident.

Conclusions: Students involved in the creation of the interactive algorithms are among the best in class and often continue to take their job in our clinic of anesthesia, resuscitation and intensive medicine.

Take-home messages: Visit www.akutne.cz

6DD Posters (en français) 2

6DD/1
Evaluation du Guide d'accompagnement des Formateurs *AFGSU* en Instituts De Formations Paramedicales

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Contexte: Dans le cadre de la validation des formateurs AFGSU, le CESU 13 a réalisé plus de 250 accompagnements d'enseignants en écoles et instituts de formation paramédicale de la région PACA. Ils ont donné lieu à des conseils pour réajuster les pratiques professionnelles. La similitude des comptes-rendus et des discussions avec les formateurs « accompagnés » a conduit à l'élaboration d'un guide regroupant les points observés et les postures favorables à une personnalisation de l'accompagnement.

Résumé des travaux: Elaboration d'un guide d'accompagnement en 5 étapes :

Classement des points de discussion selon 6 thèmes : philosophie AFGSU, supports pédagogiques, rythme et contenu de la formation, pédagogie de découverte et de simulation, communication et dynamique de groupe, évaluation de l'apprenant.

Rappel des points essentiels en tableau pédagogique.

Étude du concept de l'accompagnement et des qualités requises pour l'accompagnant.

Sélection de l'accompagnement le plus adapté possible alternant 3 postures: guidance pour garantir une conformité règlementaire, coaching pour amener l'enseignant à l'autonomie, conseil pour fournir un maximum d'outils et ressources au formateur.

Affichage des compétences, critères, activités, indicateurs de réussite en regard de ces postures.

Evaluation de l'utilisation de ce guide auprès des enseignants

Résumé des résultats / Conclusions: L'évaluation des accompagnements note l'évolution de la satisfaction des formateurs interrogés sur 4 ans. L'impact positif sur les pratiques professionnelles après l'accompagnement est significatif avec 89% de satisfaits à très satisfaits de 2010 à 2012.

Les textes recommandent un accompagnement des formateurs AFGSU en instituts de formations paramédicales, qui n'ont pas une pratique quotidienne des soins d'urgence, sans en préciser les modalités.

Basé sur des compétences techniques et relationnelles des accompagnants, cet exercice est amélioré par un guide de préparation le plus individualisé possible. Une approche ergologique peut conduire les formateurs à l'autonomie et à la maîtrise de cette activité, facteurs reconnus comme sources de motivation et d'implication et contribuer ainsi à la qualité de la formation AFGSU.

6DD/2
Les critères de choix de la spécialité des médecins résidants de la faculté de médecine et de pharmacie de Marrakech

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Contexte: Etudier les facteurs qui influencent le choix de carrière des médecins résidants de la faculté de médecine et de pharmacie de Marrakech.

Résumé des travaux: Un questionnaire composé de quatre parties a été distribué à 193 médecins résidants : la première partie concernait les caractéristiques sociodémographiques, la seconde partie le choix de spécialité choisie, la troisième partie correspondait aux facteurs personnels influençant le choix de la spécialité et la quatrième partie les caractéristiques attribuées aux choix des spécialités, réparties en six échelles de valeurs, selon l'étude de Murdoch.

Résumé des résultats: La chirurgie est un choix en très grande majorité masculin. La dermatologie et la gastroentérologie sont des choix presque exclusivement féminins. Ces différences liées au sexe des médecins sont aussi retrouvées au niveau du choix des échelles de valeurs. Les autres facteurs démographiques n'ont pas d'influence notable sur le choix de spécialité. Les échelles de valeur sont corrélées également avec les choix de spécialité des médecins. Ainsi, dans les échelles de valeurs «Intérêt académique, Prestige, Rôle de soutien» plusieurs variables sont liées au choix de la spécialité chirurgicale, tandis que dans l'échelle «Evitement des contraintes» une variable est liée au choix de la spécialité médicale. Les échelles «Orientation biosociale et bioscientifique et Revenu» ne montrent aucune corrélation positive avec le choix de la spécialité des résidants.

Conclusions: Le médecin est confronté au choix d'une spécialité et de sa future carrière professionnelle. L'attractivité pour certaines spécialités est très faible, liée certainement à des conditions d'exercice insuffisamment valorisées.

6DD/3
Certification en Langues de l'Enseignement Supérieur (CLES 3 Médecine) : Un examen national gratuit, reconnu à l'échelle européenne

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Contexte: Les médecins du 21ème siècle devront pouvoir travailler en anglais, certains exerceront dans un pays anglophone. Il sera alors indispensable de pouvoir garantir leur compétence langagière pour éviter les erreurs médicales dues à une maîtrise insuffisante de l'anglais. Il est du devoir des Facultés de médecine de préparer leurs étudiants à cette nouvelle exigence.

Résumé des travaux: Création d'une Certification en Langues de l'Enseignement Supérieur, niveau 3 médecine (CLES 3 médecine), homologation par le Ministère de l'Enseignement Supérieur et de la Recherche et le Conseil de l'Europe. Examen spécifiquement conçu pour évaluer la maîtrise de l'anglais des futurs professionnels de la santé, il se situe au niveau C1 du Cadre Européen Commun de Référence pour les Langues (Maîtrise effective et opérationnelle). Il évalue les capacités d'analyse et de synthèse à l'écrit et à l'oral dans des situations professionnelles réalistes.

Résumé des résultats: Disponible depuis 2 ans, gratuit et plébiscité par un nombre croissant d'étudiants.

Conclusions: Plus d'étudiants seront titulaires de cette certification, mieux elle sera reconnue. Nous souhaitons donc

encourager les Doyens des Facultés de Médecine à la proposer à leurs étudiants. Nous souhaitons également rencontrer nos homologues européens pour envisager avec eux une certification équivalente dans leurs pays.
Messages à retenir: Informations: http://www.medecine.ups-tlse.fr/anglais/index.php?pg=19

6DD/4
Vers une pédagogie d'apprentissage dans l'enseignement-évaluation des futurs professionnels de santé, au-delà du cours magistral à l'Université de Ngaoundéré (UN).

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Contexte: Malgré ses inconvénients, le cours magistral reste la principale méthode d'enseignement-évaluation dans le département des sciences biomédicales de l'UN. De moins en moins préconisé sous d'autres cieux, que ce modèle d'enseignement soit encore prééminent dans notre milieu invite à s'interroger sur son importance, tout en se projetant dans l'avenir.
Résumé des travaux: Le cours magistral pourrait encore être maintenu au vu du nombre insuffisant d'enseignants et du nombre grandissant d'étudiants sans connexion internet régulière.
Résumé des résultats: L'étude montre cependant que cette forme d'enseignement ne promeut l'apprentissage que dans 19% de cas seulement, avec une évaluation qui ne prend en compte que le résultat et la quantité des apprentissages. Par contre, dans 81 % de cas, les étudiants souhaitent qu'on leur apprenne et non qu'on les enseigne. Les compétences reposent plus sur des pratiques pédagogiques de construction des savoirs par les apprenants et non la transmission des connaissances par l'enseignant. L'étude suggère ainsi un basculement aisé vers le paradigme d'apprentissage.
Conclusions: Une formation adéquate devrait intégrer les méthodes d'enseignement-évaluation dans la nouvelle donne de pédagogie d'apprentissage. Celle-ci exige cependant d'énormes ressources que nos pays n'ont pas toujours, d'où

l'appel à des partenariats pour renforcer les capacités et les compétences.
Messages à retenir: Pédagogie d'apprentissage - département des sciences biomédicales- UN

6DD/5
Mentorat à Aix-la-Chapelle dans le curriculum reformé – les notes summatives et le resultat du "progress test" formative-Deux formes d´évaluation combinées dans un mentorat systématique

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Contexte: La Faculté de Médecine d´Aix-la-Chapelle a partir de 2012 offre á ses étudiants un nouveau mentorat. La combinaison de performances summatives et formatives donne la possibilité d´une vue génerale aux resultats des étudiants.
Résumé des travaux: L´évaluation combinée offre la perspective géneral de tous les domaines medicales jusqu´a la vue sur une domaine très spécifique. Le mentorat a besoin d´une amelioration dans la sélection réalistique des étudiants. La reconnaissance que les données combinées offrent de chemins nouveaux pour le feed-back nous mène à une nouvelle directive de mentorat.
Résumé des résultats: Le nouveau défi est de structurer la sélection des étudiants selon la specialité de notre curriculum. Le mentorat a changé à cause de la nouvelle information accessible en raison de l´évaluation combinée.
Conclusions: Pour definer un groupe réalistique en grandeur que se peut manœuvrer la combinaison formative et summative des performances dans lecurriculum donne le meilleur resultat. Conjointement avec une nouvelle directive de mentorat que couvre les nouvelles thématiques de cette combinaison le feed-back pour les étudiants a été ameliorée.
Messages à retenir: La perception de soi-même des étudiants a besoin d´être completée par l´évaluation combinée des resultats summatives et formatives. La comparation peut aider à détecter des problémes et à les résoudrer.

6DD/6
Comment former les moniteurs cliniques à l'enseignement au lit du patient à l'aide des "microskills": Un projet pilote international au Cambodge

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L. Goldman (*Boston University, Family Medicine Global Health Collaborative, Boston, United States*)
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TUESDAY 28 AUGUST 2012

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Contexte: Au Cambodge, le manque de moniteurs cliniques et l'augmentation du nombre d'étudiants imposent de développer un enseignement clinique en temps limité.
Résumé des travaux: Afin de tester la faisabilité d'une formation des moniteurs aux « 5 étapes de la minute du précepteur » (« 5-steps microskills »), nous avons développé une formation de formateurs de 4 jours, sur 3 thématiques : le climat d'apprentissage, les « microskills » et la rétroaction pédagogique (« feedback »). La formation comportait des QCM et des jeux de rôle. Son évaluation utilisait des données quantitatives (réponses aux QCM par boîtiers de vote interactif) et qualitatives (questionnaire final et observations).
Résumé des résultats: Les instructeurs internationaux ont formé 13 formateurs, en anglais. Puis, ces formateurs ont mené la formation pour 23 moniteurs cliniques, en Cambodgien. Les données quantitatives ont confirmé la bonne compréhension des participants, leur satisfaction et leur volonté d'utiliser les « microskills ». Les jeux de rôle ont identifié les difficultés. Les données qualitatives ont montré des barrières linguistiques et interculturelles dans l'enseignement clinique.
Conclusions: Ce projet pilote a permis la formation initiale des moniteurs cliniques aux « microskills » au Cambodge.
Messages à retenir: Cette expérience peut être utile pour des pays souhaitant développer cette technique d'enseignement au lit du patient.

6DD/7
Premiers ECOS au Cambodge: Opportunités et obstacles identifiés après le projet pilote

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Contexte: Au Cambodge, les ECOS n'ont jamais été utilisés. Leur développement est urgent car ils doivent intégrer l'examen national final du résidanat en 2013.
Résumé des travaux: Afin de tester la mise en place des ECOS, nous avons développé un examen pilote en 4 étapes. 1) Nous avons constitué une équipe de la faculté, de

moniteurs cliniques hospitaliers et de coopérants internationaux. 2) Nous avons créé un ECOS conforme au cursus et aux ressources du pays. 3) Nous l'avons testé à 2 sessions (12 internes chacune). 4) Nous l'avons évalué sur les critères suivants : organisation, notes, opportunités et obstacles pour son développement.
Résumé des résultats: L'ECOS pilote comptait 12 stations, mobilisait 14 formateurs, 2 patients standardisés, durait 3,5 heures et coûtait 650 USD. L'évaluation a identifié plusieurs besoins d'amélioration de l'organisation : parcours des internes, gestion du temps et formation des examinateurs. Les notes étaient médiocres mais l'évaluation formative stimulante. Les opportunités identifiées étaient le soutien institutionnel de la faculté et de l'hôpital, et la formation d'un coordinateur. Le principal obstacle était le manque de médecins formés.
Conclusions: La mise en place des ECOS est un défi pour le Cambodge.
Messages à retenir: Les atouts et obstacles identifiés dans ce projet pilote peuvent aider des pays émergeants développant les ECOS.

6DD/8
Création d'un outil d'évaluation des compétences lors des stages en formation initiale sage-femme

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Contexte: Créer un livret d'acquisition des compétences à partir du référentiel métier en salle de naissance :• Rendre l'étudiant acteur de sa formation• Informer le professionnel de terrain sur les compétences déjà acquises• Permettre au responsable de stage d'évaluer la progression en fin de stage et de valider.
Résumé des résultats: Composition du livret d'acquisition des compétences à partir du référentiel métier. 1. Définitions 2. Parcours des stages 3. Avant le stage : Actes déjà réalisés et compétences déjà acquises 4. Stage en cours : Actes réalisés et compétences en cours d'acquisition 5. Bilan : • Auto-bilan de mi stage et fin de stage • Validation du stage 6. Préparation du stage suivant • Analyse de cas• Bilan des formations théoriques et pratiques déjà réalisées• Définition des objectifs prioritaires pour le stage suivant
Conclusions: Projet de décliner le livret dans les différents services (Suites de naissance et consultations prénatales)

6DD/9
Evaluation du raisonnement clinique sur le partogramme par le Test de Concordance de Script (TCS) en formation initiale sages-femmes

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Contexte: • TCS : Outil d'évaluation du raisonnement clinique créé en 2000 par B Charlin.• Partogramme : Outil de surveillance de la parturiente recommandé par l'OMS pour identifier les anomalies du travail et faciliter la prise de décision.

Résumé des travaux: Développer un TCS en formation initiale des sages-femmes sur le partogramme Materiel et Méthodes :- Création de 10 vignettes avec chacune 3 questions.- Étude prospective auprès de 13 sages-femmes praticiennes et 20 étudiants sages-femmes.

Résumé des résultats: Cohérence interne du test coefficient α de Cronbach = 0,466.- 9 questions sur 60 abaissent la cohérence interne- 6 questions ne respectent aucun des critères de difficultés, et discrimination.

Conclusions: Cohérence interne non satisfaisante- Initier un groupe de travail avec des professionnels pour améliorer la qualité (Objectifs contenu, public ciblé, dimension) et augmenter la quantité des vignettes .- Utiliser cet outil d'évaluation dans un objectif formatif en ayant une banque de vignettes

6DD/10
Analyse Docimologique des Examens d'anatomie et de Biologie Humaine a la Faculte des Sciences dela Sante (FSS) de Cotonou

G M Hounnou (*Unité d'Anatomie, Faculté des Sciences de la Santé, Littoral, Cotonou, Benin*)
A F Gangbo (*Unité de Biologie Humaine, Faculté des Sciences de la Santé, Littoral, Cotonou, Benin*)
AG Ayelo (*Faculté des Sciences de la Santé, Littoral, Cotonou, Benin*)
A K Agossou-Voyeme (*Unité d'anatomie, Faculté des Sciences de la Santé, Littoral, Cotonou, Benin*)
R Darboux (*Unité de Biologie Humaine, Faculté des Sciences de la Santé, Littoral, Cotonou, Benin*)

(présentateur: G M Hounnou, Unité d'Anatomie, Faculté des Sciences de la Santé, Littoral, 01 BP 188, 03 BP 72, Cotonou 000, Benin, hounnougm@yahoo.fr)

Contexte: L'examen écrit est l'instrument privilégié de l'évaluation des apprentissages à la FSS. Cette étude avait pour objectif d'évaluer la qualité docimologique des examens d'anatomie et de biologie humaine.

Résumé des travaux: L'étude rétrospective, descriptive et analytique a porté sur des copies d'examens de 03 années académiques successives pour les étudiants de 1ère et 2ème années. Ont été analysées les copies de :
- 03 examens en anatomie comportant 38 QROC;
- 06 examens en biologie humaine, comportant 41 QCM et 64 QROC.
Ont été calculés, par épreuve d'examen, les indices de difficulté et de discrimination, et le taux de fiabilité, et pour chacune des questions, les indices de difficulté et de discrimination.

Résumé des résultats: Les épreuves d'examen étaient toutes de difficulté moyenne et discriminantes.
La correction était fiable en anatomie pour les 3 ans ; elle était fiable en biologie humaine pour les examens de 1ère année pour les 2 dernières années.
Les questions d'examen étaient de difficulté moyenne dans 64 % des cas et discriminantes dans 89 % des cas en anatomie; ces chiffres étaient respectivement de 77 % et 64 % en biologie humaine.

Conclusions: Pour améliorer la qualité docimologique de ces examens les évaluateurs doivent revisiter les questions répertoriées non discriminantes et/ou difficiles.

Messages à retenir: Mots-clés : Evaluation, apprentissage, docimologie, difficulté, discrimination, fiabilité.

6DD/11
L'enseignement et l'evaluation des Apprentissages en Anatomie Humaine a la Faculte des Sciences de la Sante (FSS)de Cotonou

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A M Agbétou (*Faculté des Sciences de la Santé, Littoral, Cotonou, Benin*)
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Contexte: L'anatomie est enseignée et évaluée différemment selon les universités et les époques. Elle est considérée comme difficile mais indispensable aussi bien par les étudiants que par les enseignants. Cette étude avait pour objectifs d'évaluer l'enseignement de l'anatomie humaine à Cotonou et de déterminer les corrélations entre la performance générale et la performance en anatomie des étudiants.

Résumé des travaux: Il s'agit d'une étude transversale, descriptive et analytique couvrant une période de 37 mois. Elle a porté sur 524 étudiants en médecine de 1ère et 2ème année et 146 enseignants de la FSS, colligés par échantillonnage exhaustif.

Résumé des résultats: L'anatomie a été jugée difficile par 70% d'étudiants. Elle était considérée comme indispensable par 84% d'étudiants et 90% d'enseignants. La dissection était le mode d'enseignement privilégié par les étudiants et les enseignants. L'évaluation par QCM et par TP de dissection a été préférée par aussi bien les étudiants que les enseignants. La performance générale de l'étudiant était positivement corrélée à sa performance en anatomie humaine (r = 0,76).

Conclusions: L'anatomie humaine apparaît comme un bon reflet du niveau de l'étudiant et pourrait constituer à ce titre un bon indicateur de performance de l'étudiant du premier cycle de médecine à la FSS de Cotonou.

Messages à retenir: Mots clés : Anatomie humaine, enseignement, évaluation, performance, faculté

6DD/12
Impact pédagogique d'ateliers d'enseignement sur la prise en charge des voies aériennes supérieures. Exemple des ateliers pratiques de la Formation des Référents aux Techniques d'Intubation

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Cecile Magne (*CHU Nantes, SAR Anesthésie Réanimation Chirurgicale, Hôtel Dieu H.M.E. , Nantes, France*)
Xavier Combes (*CH Felix-Guyon, SAMU 974, St Denis - La Réunion, France*)
Olivier Langeron (*Groupe Hospitalier la Pitié-Salpêtrière-APHP, SAR Anesthésie Réanimation Chirurgicale, Paris, France*)
Corinne Lejus (*CHU Nantes, SAR Anesthésie Réanimation Chirurgicale, Hôtel Dieu H.M.E. , Nantes, France*)

(*présentateur:* Laurent Brisard, G.R. CHU Laennec, SAR Anesthésie Réanimation Chirurgicale, Boulevard Jacques Monod, St Herblain 44800, France, laurent.brisard@me.com)

Contexte: La FRTID est une formation multidisciplinaire accréditée par le Collège Français d'Anesthésie-réanimation(CFAR).L'objectif était de déterminer les facteurs pouvant conduire à un souhait de modification des pratiques médicales(SMP).
Résumé des travaux: Sessions FRTID annuelles nantaises 2008-2011.Chaque atelier pratique et séance de simulation médicale étaient évalués par 5 items noté de 1 à 10 et une question fermée sur un SMP éventuel (auto-questionnaire du CFAR).Une auto-évaluation du niveau théorique initial(NTI) était également réalisée avant et après formation(échelle continue de 1 à 10).Utilisation de simulateurs haute-fidélité(HF) de 2008 à 2010 et basse-fidélité(BF) en 2011.Notes exprimées en médiane(25-75%).Analyse statistique par tests de Kruskal-Walis, Mann-Whitney ou exacte de Fischer selon les variables.Régression logistique pour l'étude des facteurs indépendants associés à un SMP.p
Résumé des résultats: 1032 notes évaluatives.L'évaluation du NTI des participants s'élevait après la FRTID(5[4-7] vs. 8[7-9],p
Conclusions: Les ateliers de la FRTID favorisent le SMP.L'absence de HF n'impacte pas le message pédagogique.L'enseignement par simulation bien que très apprécié n'est pas supérieur aux ateliers individuels.
Messages à retenir: Le NTI des participants devrait conditionner le mode de fidélité des séances de simulation voire la préférence d'ateliers simples d'enseignement.

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SESSION 7: Simultaneous Sessions
Tuesday 28 August: 1345-1530

7A Symposium: Medical student selection: to choose the best or to exclude the unsuited?

Brian Kelly (*University of Newcastle, Australia*)
David Powis (*University of Newcastle, Australia*)
Steven Hurwitz (*University of Newcastle, Australia*)
Miles Bore (*University of Newcastle, Australia*)

Don Munro (*University of Newcastle, Australia*)
Jon Dowell (*University of Dundee, United Kingdom*)

Medical school applicants come with both strengths and weaknesses in the context of future professional practice. Current selection procedures focus on identifying outstanding positive qualities, but ignore the present of problematic negative traits. We will describe models of selection that seek to identify the presence of unsuitable traits as well as the most desirable qualities. We will include an example of implementation of one such model in an Australian medical school.

7B Symposium: Encouraging the establishment of programs of research

Larry Gruppen (*University of Michigan Medical School, USA*)
Lambert Schuwirth (*School of Medicine, Flinders University, Adelaide, Australia*)
Diana Dolmans (*Maastricht University, The Netherlands*)
Stewart Mennin (*Sao Paulo, Brazil*)

Medical education research is expanding rapidly and finding its own scientific position. It has become increasingly clear that the big answers are not to be found in a series of single studies, but require a more programmatic approach to research. Educators and journal editors are also acknowledging this need. This symposium seeks to help medical educators work towards establishing and sustaining a program of research. Short presentations and a highly interactive and unique format (Café Philosophica) will promote a rich and relevant exchange among the audience and panel discussants.

7C Symposium: The Bologna Process – where are we and how does it relate to curriculum trends in medical education?

Madalena Patrício (*University of Lisbon, Portugal, and AMEE*)
Ronald Harden (*AMEE, Dundee, United Kingdom*)

The Bologna Process has been described as one of the key initiatives in education. The implementation of the Bologna Process including the 3-cycle system has been studied as part of the EU funded MEDINE2 initiative. Views of schools across Europe have been surveyed and will be reported at this Symposium. How the Bologna developments relate more generally to curriculum trends in medical education, as identified in an international survey, will be addressed.

7D Communications courtes (en français): Curriculum

7D/1
Révision curriculaire du programme md à l'Université de Sherbrooke

Ann Graillon (*Université de Sherbrooke, faculté de médecine, pédiatrie, Sherbrooke, Canada*)
Eve-Reine Gagné (*Université de Sherbrooke, faculté de médecine, néphrologie, Sherbrooke, Canada*)
Marianne Xhignesse (*Université de Sherbrooke, faculté de médecine, médecine de famille, Sherbrooke, Canada*)
Denis Bédard (*Université de Sherbrooke, Faculté d'éducation, département de pédagogie, Sherbrooke, Canada*)

(*présentateur:* Ann Graillon, Université de Sherbrooke, Faculté de médecine, pédaitrie, 3001 12ème avenue Nord, 1800 rue d'anjou, Sherbrooke J1H 5N4, Canada, ann.graillon@usherbrooke.ca)

Contexte: La faculté de médecine et des sciences de la santé de l'Université de Sherbrooke a entrepris une révision de son curriculum d'études médicales pré-doctorales afin de l'inscrire dans une perspective de parcours de développement des compétences.
Résumé des travaux: Un état de la situation a été dressé en réalisant de multiples consultations auprès de la communauté facultaire. Parallèlement, une synthèse des grandes recommandations découlant de la littérature portant sur la réforme de l'éducation médicale a été faite. Inspiré du modèle CIPP de Stufflebeam (2003), les besoins et les opportunités ont été définis, des actions identifiées et leur implantation planifiée.
Résumé des résultats: Six grandes orientations-phares se dégagent du processus : agir avec compétences, généralisme, décloisonnement, collaboration interprofessionnelle, flexibilité et gestion. Elles permettent de guider et d'évaluer la planification du changement curriculaire. Des communications régulières avec les comités du programme et des rencontres de grands groupes de professeurs ont permis de renseigner au fur et à mesure les acteurs-clés du programme.
Conclusions: Par un processus d'analyse rigoureux, une démarche claire, l'implication et la mobilisation des différents intervenants il est possible de proposer des modifications significatives au curriculum et de l'inscrire dans un parcours de développement des compétences.

7D/2
Le 'choc des images' comme pratique d'évaluation et d'élaboration des programmes de formation en santé

Catherine Romanus (*HELB Ilya Prigogine, kinésithérapie, Bruxelles, Belgium*)
Helyett Wardavoir (*HELB Ilya Prigogine, kinésithérapie, Bruxelles, Belgium*)
Marc Wattel (*Area Santé asbl, Bruxelles, Belgium*)
Dominique Peeters (*HE Paul Henri Spaak, kinésithérapie, Bruxelles, Belgium*)
Karin Van Loon (*HE Paul Henri Spaak, kinésithérapie, Bruxelles, Belgium*)
Florence Parent (*Université Libre de Bruxelles, Santé Publique, Bruxelles, Belgium*)

(*présentateur:* Catherine Romanus, HELB Ilya Prigogine, kinésithérapie, HELB Ilya Prigogine, campus Erasme bât. P, route de Lennik, 808, Bruxelles 1070, Belgium, catherine.romanus@helb-prigogine.be)

Contexte: L'intérêt de favoriser une logique par compétences en éducation médicale et dans le secteur de la santé en général se concrétise par l'existence de plus en plus fréquente, au sein institutions de formations, de référentiels de compétences. Cependant, envisager le lien entre ces référentiels et les logiques disciplinaires existantes reste un défi dans le cadre d'un processus de révision curriculaire.
Résumé des travaux: Le développement d'outils informatiques de type base de données et logiciel graphique peut aider à structurer/lier les éléments d'un curriculum par compétences tout en favorisant une démarche de questionnement et de consensus entre acteurs concernés par le processus.
Résumé des résultats: La recherche-action menée a permis de développer un logiciel graphique d'aide à l'élaboration, évaluation et accompagnement des équipes enseignantes dans la mise en œuvre d'un curriculum par compétences en kinésithérapie. Il apparaît que l'outil servant de support au processus permet de répondre à l'exigence de clarification globale des liens entre dispositifs curriculaires, savoirs et composantes du référentiel de compétences, favorables à une vision interdisciplinaire du programme.
Conclusions: Après un processus itératif de deux ans, certains résultats permettent de confirmer l'intérêt de développer ce type d'outils, autant en formation qu'en enseignement clinique, centrés sur une représentation figurative des différentes composantes d'un programme.
Messages à retenir: Le "choc" des images graphiques dans la révision curriculaire des programmes centrés sur une approche par compétences.

7D/3
Groupes de réflexion et d'accompagnement personnel au VU University Medical Center : bilan des échanges

Veronica J. Selleger (*VUmc, Medical Psychology, Amsterdam, Netherlands*)
Albert Wenisch (*VUmc, Medical Psychology, Amsterdam, Netherlands*)
José J.S. van de Kreeke (*VUmc, Medical Psychology, Amsterdam, Netherlands*)

(*présentateur:* Veronica J. Selleger, VUmc, Medical Psychology, van der Boechorststraat 7, Amsterdam 1081BT, Netherlands, vj.selleger@vumc.nl)

Contexte: On connaît l'importance du vécu personnel au cours des études de médecine, et de sa relecture accompagnée. Mais les étudiants montrent une certaine réticence face à cela. Au VUmc d'Amsterdam, le cursus intègre un parcours de réflexion et d'accompagnement, qui se termine par sept sessions en petits groupes coachés pendant l'externat.
Résumé des travaux: Les questions abordées ont été répertoriées après chaque session (31), et les 173 externes ont répondu à un questionnaire jugeant du caractère utile et agréable des échanges, et du climat de confiance des sessions.
Résumé des résultats: Sujets récurrents : responsabilités professionnelles, problématiques de carrière, relations hiérarchiques, expériences émotionnelles, développement personnel et professionnel. Moyenne des évaluations effectuées selon l'échelle de Likert (1 à 5): A. « Écoute des

expériences des collègues » : utile 4.0 ; agréable 4.3; B. « Discussion sur ses propres expériences » : utile 3.7 ; agréable 3.9; C. « Climat confiance » lors des échanges : 4.4 Les différences entre A et B sont significatives (test Mann-Whitney, p < 0.05).

Conclusions: Les étudiants jugent ces groupes d'échanges rassurants, agréables et utiles. Une préférence se dégage pour la mise en commun d'expériences qui se révèlent partagées (« je ne suis pas le seul »).

7D/4
Le professionnalisme des résidents - le rôle de l'Ordre professionnel

Anne-Marie MacLellan (*Collège des médecins du Québec, Direction des études médicales, Montréal, Canada*)
Sylvie Leboeuf (*Collège des médecins du Québec, Direction des études médicales, Montréal, Canada*)
Ernest Prégent (*Collège des médecins du Québec, Direction des études médicales, Montréal, Canada*)

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Contexte: Les résidents et les moniteurs (fellows) inscrits en formation au Québec sont tenus de respecter les mêmes règles en matière de déontologie professionnelle que celles applicables aux médecins en exercice. Cependant, les mécanismes prévus dans la réglementation du Québec pour le traitement d'une plainte contre un médecin en exercice (enquêtes et conseil de discipline) ne s'appliquent pas aux résidents ni aux moniteurs.

Résumé des travaux: Cette présentation discutera des méthodes de traitement des plaintes relatives au professionnalisme des résidents/moniteurs mises en place par le Collège des médecins du Québec (CMQ) et les bureaux des vice-doyens universitaires, et de la préparation d'un nouveau règlement sur le contrôle des résidents.

Résumé des résultats: Les modalités actuelles et futures de traitement des plaintes seront discutées. Les données sur les 29 plaintes traitées depuis 2006 pour manquement au professionnalisme seront analysées de façon quantitative et qualitative.

Les motifs des plaintes ainsi que les solutions trouvées seront exposés. Le nouveau règlement détaillant des mesures d'enquête formelle et des sanctions sera présenté.

Conclusions: Le nouveau règlement sur le contrôle des résidents facilitera et formalisera l'intervention auprès des résidents et moniteurs présentant des problèmes de professionnalisme.

Messages à retenir: L'ordre des médecins, le CMQ, protège le public, même durant la formation de ses futurs membres.

7D/5
Le projet sur l'avenir de l'éducation médicale au Canada - volet postdoctoral : Une vision collective

Nicolas Busing (*Association des facultés de médecine du Canada, Direction générale, Ottawa, Canada*)
Kenneth Harris (*Collège royal des médecins et chirurgiens du Canada, Bureau de l'éducation, Ottawa, Canada*)

Anne-Marie MacLellan (*Collège des médecins du Québec, Direction des études médicales, Montréal, Canada*)
Ivy Oandasan (*Collège de médecine de famille du Canada, Direction des études, Toronto, Canada*)
Geneviève Moineau (*Association des facultés de médecine du Canada, Direction générale, Ottawa, Canada*)

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Contexte: Une vision novatrice a été développée par un consortium de quatre partenaires, l'Association des facultés de médecine du Canada, le Collège des médecins du Canada, le Collège de médecine de famille du Canada, et le Collège royal des médecins et chirurgiens du Canada, et avec d'autres organisations médicales.

Résumé des travaux: Cette présentation détaillera les données recueillies, incluant la revue de la littérature, les entrevues avec des intervenants et l'examen des meilleures pratiques à l'échelle internationale.

Résumé des résultats: Les dix recommandations sont: 1) assurer un mélange judicieux, une répartition appropriée et un nombre suffisant de médecins pour répondre aux besoins de la société, 2) cultiver l'imputabilité sociale par des expériences d'apprentissage variées 3) intégrer des programmes de formation basés sur les compétences, 4) créer des environnements positifs et aidants pour l'apprentissage et le travail, 6) développer, appuyer et reconnaître les enseignants cliniciens, 7) assurer une intégration et des transitions efficaces tout au long du continuum pédagogique, 8) encourager le développement du leadership, 9) établir, une gouvernance efficace et collaborative, et 10) aligner les normes d'agrément.

Conclusions: Des mesures transformatives et des stratégies d'implantation seront proposées.

Messages à retenir: Cette vision dynamique aidera le Canada à faire face aux nouveaux défis en éducation médicale et en santé.

7D/6
Création d'un réseau de leaders de la pédagogie à la Faculté de médecine de l'Université de Montréal pour la transformation des programmes en approche par compétence (APC).

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Louis-Georges Ste-Marie (*Université de Montréal, Centre de Pédagogie Appliquée aux Sciences de la Santé (CPASS), Montreal, Canada*)
Nicolas Fernandez (*Université de Montréal, Centre de Pédagogie Appliquée aux Sciences de la Santé (CPASS), Montreal, Canada*)
Nathalie Caire Fon (*Université de Montréal, Centre de Pédagogie Appliquée aux Sciences de la Santé (CPASS), Montreal, Canada*)
Paule Lebel (*Université de Montréal, Centre de Pédagogie Appliquée aux Sciences de la Santé (CPASS), Montreal, Canada*)

Suzie Savard *(Université de Montréal, Centre de Pédagogie Appliquée aux Sciences de la Santé (CPASS), Montreal, Canada)*

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Contexte: Une stratégie pour implanter l'APC à l'UdeM et former les 3000 enseignants a été de créer un réseau de 60 leaders pédagogiques sous la responsabilité partagée des départements et du Centre de Pédagogie (CPASS).
Résumé des travaux: Les obstacles rencontrés ont été les sentiments d'isolement, d'incompétence en pédagogie, incertitude quant au mandat et l'absence de reconnaissance. Pour aborder ces difficultés, formation obligatoire, mentorat entre leaders expérimentés/juniors, regroupement selon des thématiques communes ont été encouragés avec suivi systématique de la progression des travaux des sous-groupes. Deux fois l'an, les leaders doivent rendre compte de leur travail: le bilan de ces activités est recadré périodiquement en fonction des objectifs définis selon le plan stratégique.
Résumé des résultats: Les leaders motivés et autonomes appartenant à un groupe mobilisé autour d'une thématique précise offrent des activités d'apprentissage jugées de qualité par les participants. Les leaders isolés ont peu de réalisations et se sentent moins performants. Les leaders mieux soutenus par leur département sont plus pro-actifs.
Conclusions: La guidance et la reconnaissance sont essentielles afin que les leaders s'acquittent de leur mandat avec satisfaction. Un nombre croissant d'activités de formation en APC auprès des enseignants cliniciens témoigne de l'efficacité du programme.
Messages à retenir: Une collaboration étroite département-centre de pédagogie stimule la productivité des leaders

7D/7
Enquête prospective des motivations et de l'impact à distance de la Formation des Référents aux Techniques d'Intubation Difficile (FRTID)

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Contexte: La conférence d'expert intubation difficile(ID) 2006 recommande le suivi d'enseignements spécifiques.La FRTID permet la formation de référents ID multidisciplinaires.L'objectif est d'analyser les motivations des participants et les actions réalisées à distance(AD).
Résumé des travaux: Quatre questionnaires étaient remis aux participants(n=207) des sessions nationales de la FRTID(Nantes-Paris,2008-2011):évaluation initiale(T00),finale(T01),6 mois(T06) et 1 an(T12).Les projets de développement de l'ID(PDI) et de modification de pratiques médicales(MPM) étaient recherchés de T01 à T12, puis le résumé des AD de T06 à T12.Un classement de 9 motivations était proposé pour le suivi de la FRTID(T00-T01) puis d'une formation similaire sur l'ID(T06-T12).Recueil

prospectif des données.Classements(C) exprimés sur échelle continue de 1 à 9 en médiane(percentiles 25-75%).Analyse statistique par tests de Kruskal-Wallis et du chi-2.Seuil de significativité:p<0,05.
Résumé des résultats: Taux de réponse:66(T00),42(T01),44(T06) et 30%(T12).Deux motivations amélioraient leur classement dans le temps:«mise en situation sur mannequin/simulateurs»(C=4[3-6] vs. C=3[2-4],p
Conclusions: Les participants privilégient l'apprentissage pratique notamment sur simulateur plutôt que le rôle de référent ID.Les nombreuses AD constatées remplissent les objectifs premiers de la FRTID.
Messages à retenir: La FRTID permet une amélioration positive des pratiques professionnelles et de l'organisation des soins dans le domaine de l'ID.

7E Short Communications: OSCE 2

7E/1
Assessing clinical, legal and ethical competencies using an integrated OSCE model

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Background: When OSCEs were first introduced in UK medical schools they tended to test one skill/competency per station. Over the last ten years there has been a general acceptance that OSCE stations should integrate more than one aspect of a consultation in order to more accurately reflect the realities of clinical practice.
Summary of work: In 2011 UCL Medical School ran an integrated ten minute case-based OSCE station as part of MBBS finals. This station tested students' communication, data interpretation and clinical management skills along with their knowledge and application of the law and professional guidance on treating patients who lack capacity towards the end of their lives.
Summary of results: 400 students took the OSCE station. The mean score was 14.4 out of 20 (SD = 3.58). The range was 3-20, with peaks in performance noted at scores of 14.0, 17.0 and 20.0, indicating that students generally performed well.
Conclusions: An integrated station like this provides a good opportunity to assess students' all round preparedness for clinical practice.
Take-home messages: Integrated OSCE stations, covering clinical, legal and ethical competencies, offer a viable and

effective means of assessing medical student preparedness for practice.

7E/2
Mini-OSCE in the evaluation of Taiwanese clerks' surgical clinical skills

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Background: OSCE (objective structured clinical examination) has many strengths as a summative and formative assessment instrument, but it has a high demand on time, manpower, and cost. The surgery department at China Medical University Hospital in Taiwan developed a simplified version of OSCE, called mini-OSCE, for use as a clinical examination and medical education approach.
Summary of work: 253 first-year clerks were evaluated in surgical medicine by 4-6 mini-OSCE stations followed by immediate feedback provided by the clinical teacher. The Revisit and Revise meeting after the examination was held to help the clerks understand how to improve their clinical skills.
Summary of results: A survey was conducted immediately after the examination to understand their responses to mini-OSCE, and the return rate of the survey was 100%. Results of the survey revealed that, on a scale from 0 to 5 where 0 means strongly disagree/dissatisfied and 5 means strongly agree/satisfied, these clerks' levels of satisfaction were: immediate feedback from clinical teacher (mean=4.14), the whole test (mean=4.12), performance of standardized patient (mean=4.11), test tools and equipment (mean=4.08), and test time (mean=3.88).
Conclusions: Mini-OSCE can be used to evaluate clinical skills and provide immediate suggestions for improvement.
Take-home messages: It is suggested that mini-OSCE be applied in other departments of medical training.

7E/3
A study of integrating virtual patient and standardized patient OSCE

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Background: There are advantages and deficiencies in virtual patients and standardized patients. We designed a novel iOSCE integrating these two simulations to achieve a comprehensive competency education and assessment.
Summary of work: The iOSCE is composed of 5 stations. Station 1 is planned to assess the competencies of history taking and physical examination by using a SP; Station 2 is designed to assess the ability of differential diagnosis from the information gained from the previous station by using a virtual patient system; Station 3 aims to assess the ability of laboratory and imaging tests, decision making and interpretation by using a virtual patient system; Station 4 is intended to assess the ability of diagnosis and clinical reasoning by virtual patient; and Station 5 is a session for giving feedback to the examinees by the tutor.
Summary of results: 30 medical students have experienced two scenarios of iOSCE. The average satisfaction score of the iOSCE is 4.6 out of 5.0. In addition, most participants stated that they are willing to attend and would recommend this assessment to their classmates.
Conclusions: The results revealed that iOSCE is a satisfactory formative assessment; it is worthy of further development and enrichment.
Take-home messages: The benefit of integrating virtual patients and standardized patients and how to perform it.

7E/4
The performance of undergraduate medical students with a disability in structured clinical examinations

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Background: Little research exists on the performance of third-level students with a disability (Richardson, 2009). In medical education, research is scarce on the impact of disability in performance-based assessments, such as the OSCE (McKendree & Snowling, 2011). This study investigates the fairness of the Integrated Structured Clinical Examination (ISCE) to students with disability. This is the primary performance-based assessment in Peninsula Medical School, UK (Mattick, Dennis, Bradley & Bligh, 2008).

Summary of work: Historical ISCE scores of 655 Year 2 and 541 Year 4 students from a three-year period were compiled. Analysis of Variance was used to assess potential differences in the scores of students with either 'No Known Disability', 'Specific Learning Disability' or 'Other Disability'. Gender and Ethnicity were also analysed.

Summary of results: Disability did not have a significant impact on Year 2 and Year 4 ISCE scores. Ethnicity had a small but significant effect on Year 4 ISCE scores.

Conclusions: The results suggest that the ISCE does not disadvantage students with a disability. This has implications for guidelines on the accommodations given to these students (McKendree & Snowling, 2011).

Take-home messages: This research adds weight to the argument that performance-based assessments are fair to students with a disability.

7E/5
Effectiveness of Integrated Assessment of Basic Medical Sciences: A Qualitative Study of Borderline Students

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Background: To contextualize training & assessment of Basic Health Sciences (BHS) and make BHS practical's relevant to the clinical practice; we introduced innovative assessment-IPE (Integrated Practical Examination) in 2009. The IPE blueprint consisted of 17-stations, each based on a clinical theme and 2-3 integrated tasks involving application of BHS knowledge with clinical & generic skills. Each station was directly observed by trained faculty. During past 2-year, IPE failure % was on rise which compelled us to explore IPE through qualitative research.

Summary of work: An exploratory case study, using mixed method approach (with a dominant qualitative focus) was conducted at Shifa in Feb 2011. 21-students of 1st year MBBS failed in 2010-summative exam. During their resit in Feb-2011, all voluntary participants were given a semi-structured questionnaire. After exam, a focus group discussion was conducted with nine randomly selected participants, recorded digitally, transcribed, coded and categorized into themes. Questionnaire data was analyzed for descriptive statistics. Triangulation of data was done.

Summary of results: Students validated the IPE with positive perceptions. "IPE made us clinically more competent. It improved peer interaction &interpersonal skills. It enabled us to interact with patients &their families unhesitantly".

Conclusions: IPE is acceptable to even borderline students.

Take-home messages: Psychometrics do matter; however, acceptability of assessment to all stakeholders must be explored by qualitative research.

7E/6
Comparison of assessment scores of candidates for communication skills in an OSCE, by examiners, candidates and simulated patients

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Background: Though OSCE method has been verified by several researchers for the appropriate assessment of competence in clinical skills, medical educationists have some concerns regarding the value of assessment of communication skills and empathy by this method. Hence, we sought to assess differences among the examiners, the candidates and the simulated patients (SPs) for communication skills

Summary of work: A total of 23 general practitioners, who were preparing for their postgraduate clinical examination, participated in a practice OSCE on seven stations in this study. The examiners observed and evaluated the candidates during the whole consultation, using the pre-tested checklist included 15 items with a global rating scale. The simulated patients also evaluated the candidates at the end of consultation, using the same checklist.

Summary of results: There were significant differences among the examiners, the candidates and the simulated patients regarding the all aspects of communication skills. However, introduction to patients some non-verbal communication did not show any significant difference (p-value => 0.05). The correlation between examiners and SPs (r=0.07, p=0.7) and SPs and candidates (r=0.01, p=0.95) was very low and not significant. Cronbach's alpha was 0.968 across items, whereas among seven stations it was 0.931.

Conclusions: This study highlighted a significance difference among examiners, SP and candidates therefore there is need for further research regarding the role of SPs in summative assessments.

Take-home messages: Simulated patients should involve in assessment process if would like to generate real patients-centered doctors.

7F Short Communications: The Student in Difficulty

7F/1
Generic learning skills in academically-at-risk medical students: a development programme bridges the gap

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Background: Widening access and enrolling students from diverse educational backgrounds is a global education mandate. These students benefit from development programmes that acknowledge generic skills development in promoting academic success. Little, however, is known of the impact of these programmes on students' skills profiles.
Summary of work: This study was designed to determine whether academically-at-risk first year medical students at the University of Cape Town (UCT) (1) have a different generic skills profile as compared to conventional students; and (2) undergo a change in their skills profile after completing a 12-month Intervention Programme (IP).
A previously validated, self administered questionnaire was used to record students' practice of, and confidence in, information handling, managing own learning and technical, numeracy, IT and organisational skills. Surveys were conducted at the beginning and end of first year, after completing the IP.
Summary of results: 80 (19.6%) of 409 students entered the IP after failing semester 1. The practice of, and confidence in, 5 categories of skills was significantly poorer at entry in the IP students. After completing first year, including the IP, the gap between the practice of, and confidence in, 5 categories of skills between IP and conventional students was no longer significant. 81% of the IP students passed first year.
Conclusions: Academically-at-risk students entering medical school lack key generic learning skills. A development programme closed the skills gap and had an excellent first year retention rate.
Take-home messages: Development programmes for academically-at-risk medical students should provide specific training on generic skills as this may be an important feature of programmes with high throughput rates.

7F/2
Significant dropout risks among medical students

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Background: Medical schools with direct access from high school can have a high level of dropout. This is also the case in Denmark, where a 27% dropout-rate has been reported in 1999. The purpose of this study was to qualify the ongoing discussions concerning this high dropout level.
Summary of work: The design was a retrospective cohort study. Relevant variables were extracted from the database

of Aarhus University for the 639 students starting medicine in 1999 and 2000. A pre-admission and a post-admission multivariate model were then examined.
Summary of results: We found a dropout rate of 20%. Most students dropped out during the first year. In the pre-admission model, type of admission exam was a strong predictor of dropout, whereas previous matriculation at another higher education protected against dropout. In the post-admission model, obtaining leave was a very strong predictor of dropout, whereas higher grades protected against dropout.
Conclusions: We conclude that the dropout-rate has been decreasing during the past decade. Young people considering medicine could be advised to choose natural science in high school, but a number of research questions concerning preparedness for medical school are worth pursuing.
Take-home messages: Leave or very low grades during the first and second study year could be red flags to supervisors.

7F/3
Predictors of Stress Responses to High Acuity Events in Paramedics

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Background: When individuals exhibit stress responses, performance can be impaired. However, little is known regarding the predictors of stress responses during high acuity events. We examined whether coping styles, social support, trauma symptoms, and gender predicted the stress responses (subjective & physiological) of paramedics in a simulated high acuity event.
Summary of work: Twenty-two advanced paramedics managed a cardiac patient in a simulated (mannequin and standardized patient-based) scenario, which included auditory noise and socio-evaluative stressors. Baseline salivary cortisol and subjective anxiety levels were assessed at baseline and immediately following the scenario. Prior to the scenario, participants completed questionnaires targeting demographics, coping styles, post-traumatic symptoms and social support.
Summary of results: Task-oriented coping and social support were associated with decreased anxiety responses to the scenario (r=-.57 & r=-.59, p<.01). In contrast, emotion-oriented coping was associated with greater anxiety responses (r=.52, p<.01), and avoidance-oriented coping was associated with greater cortisol responses (r=.35, p<.05). Post-traumatic symptoms and gender were not significantly correlated with stress.

Conclusions: Coping styles and social support were predictors of stress responses in advanced paramedics.
Take-home messages: Educational and institutions interventions aimed at positive coping styles and increased social support could have beneficial effects on the workers who face high acuity events as part of their regular work responsibilities.

7F/4
Prediction and Prevention of Failure: An Early Intervention to Assist At-Risk Medical Students

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Background: Prediction of who will struggle in medical school is difficult, and few programs have consistently identified and prevented the failure of at-risk students. Weak students may not recognize defects in their study habits and frequently under-utilize student support services until they fail exams.
Summary of work: Taking advantage of a recently introduced exam two weeks into medical school, and adapting previous work with students who repeated first semester, we designed an early intervention aimed at reducing students' failure rate. Students who failed that first exam were invited to a series of interactive workshops which addressed affective and cognitive elements of performance, including critical thinking, active learning and test-taking. Participants were surveyed, and their subsequent exam performance was compared with non-participants.
Summary of results: Since the introduction of the new exam in 2010, 50% of those who failed (n=136) went on to fail first semester. After introduction of the workshop series in 2011, this overall rate was unchanged. However, for those who attended three or more workshops (16 of 59 invitees), the failure rate dropped to 37%. Half of survey respondents claimed the workshops helped.
Conclusions: An early exam can predict subsequent performance, and a thoughtful intervention can contribute to success for committed students who attend regularly.

7F/5
A longitudinal study on relationships of previous academic achievement, emotional intelligence, and personality traits with psychological health of medical students during stressful periods

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Background: There is considerable evidence that emotional intelligence (EI), previous academic achievement (i.e. CGPA) and personality are determinants of success in various occupational settings.
Summary of work: A one-year prospective study was done. CGPA was obtained from student record. The USMEQ-I and USMaP-i were used to measure EI and personality traits prior to admission. The stress, anxiety and depression were measured by the DASS-21 during the continuous (time 1) and final (time 2) examinations.
Summary of results: At the less stressful period (time 1), stress level was predicted by Agreeableness and the final CGPA ($p<0.05$), anxiety level was predicted by Emotional Control and Emotional Conscientiousness ($p<0.001$), and depression level was predicted by the final CGPA and Extraversion ($p<0.01$). At the most stressful period (time 2), Neuroticism predicted stress level ($p<0.001$), anxiety level was predicted by Neuroticism and Emotional Expression ($p<0.001$) and depression level was predicted by Neuroticism ($p<0.001$).
Conclusions: Neuroticism was the strongest predictor of psychological health of medical students during the most stressful period. Personality traits, emotional intelligence and previous academic performance were valid predictors of psychological health during the less stressful period.
Take-home messages: Selecting medical students based on previous academic performance, personality traits and emotional intelligence are perhaps a more inclusive way for medical schools to produce healthier future doctors.

7F/6
The Problem Learner: the Trainees' Perspective

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Background: A problem learner (PL) fails to meet the knowledge, skills or attitudes expected in training. All clinicians will at some stage encounter a PL. Although challenging, dealing with a PL can be a rewarding aspect of clinical teaching.

Summary of work: UK regional 21-item questionnaire study looking at paediatric trainees understanding of the term PL and support of PLs.

Summary of results: All respondents (93%, 137/148) taught mainly medical students (86%) and Foundation doctors (79%). PLs were identified as showing disinterest (53%), lacking motivation (49%), failing to grasp key concepts (42%) and being unreceptive to constructive feedback (42%). Strategies used to help PLs included constructive feedback (93%), private conversations (66%) and 1:1 teaching (54%). Factors which hindered respondents in helping PLs were being too busy (56%) and inexperience (52%). Although over half of respondents would inform an educational supervisor, few received any formal teaching about PLs but felt this should be provided during training.

Conclusions: As PLs may present to all grades of doctors, it is important to equip junior doctors with skills to help PLs.

Take-home messages: Training on PLs should be provided to all doctors regardless of grade to enable early identification and effective interventions.

7G Research Papers: Clinical Education

7G/1
Rater effects in OSCEs: Differences in location, dispersion and distinctiveness and their consequences for reliability

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Introduction: Objective structured clinical/practical examinations (OSCE/OSPE) are two of the most commonly used assessment methods for practical skills in medical education. Though it has been shown that OSCEs may have a high objectivity and reliability (necessary prerequisites for the validity of the examination), the quality of an OSCE has to be ensured by the careful preparation of materials and by carefully conducting the examination. The role of the rater is one crucial aspect here. Various rater effects like "leniency" or "restriction of range" have been mentioned in the literature [1] and were identified as severe threats to validity. Therefore, rater effects have to be controlled to guarantee the quality of the assessment.
Firstly, we present a method to identify the examiner effects "leniency" (systematic differences in the location of scores),

"restriction of range" (differences in the dispersion of scores) and "discrimination" (differences in the distinctiveness of raters) which are used in the OSCE in General Internal Medicine at the University of Heidelberg, and demonstrate their relevance. Secondly, the influence of these effects on reliability is investigated by generalizability theory.

Methods: The OSCEs in General Internal Medicine consist of 12 stations. About 130 to 170 students are examined each term in up to 15 circuits on two days. Most raters changed within the two days, so that there are 2 to 5 raters per station during the whole examination period. All stations are scored on a 25-points-scale. Students are allocated randomly to the stations, so - in case of no rater effects - the distribution of scores awarded to students should be identical for the raters of each station. The data of the OSCEs of the last three semesters were analyzed. To prove the relevance of the rater effects, the differences between the individual score distributions were tested non-parametrically. In order to be able to estimate the influence of the rater effects on the reliability, a generalizability theory analysis was performed. The coefficients for generalizability and error of measurement with and without rater effects were compared.

Results: Differences in location and dispersion could be proven to be significant ($\alpha \leq 0.05$) in 50% resp. 30% of all stations. Significant differences in distinctiveness were found in 15% of the stations. The generalizability of the OSCEs, considering rater effects, ranged from 0.60 to 0.81. Without rater effects, the estimated range was 0.68 to 0.84. Rater effects were responsible for about 10-15% of the measurement error.

Discussion: Although the influence of rater effects on the reliability is not dramatic, these effects may lead to unfair exam results in particular cases. The analysis presented here enables the identification of the raters' specific shortcomings in scoring in order to develop individually optimized rater trainings.

Conclusions: Rater effects are a severe threat to the reliability of OSCEs, but they can be controlled to ensure the quality of the assessment method.

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7G/2
Exploring the sources of diagnostic errors and the mechanisms through which reflection counteracts mistakes: the role of salient distracting clinical features

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Introduction: Flaws in physicians' reasoning are present is most diagnostic errors, and occur even when the physicians have enough knowledge to solve the problem(1). Deliberate reflection has been shown to improve diagnoses(2). Little is known about the causes of faulty reasoning and about how

reflection neutralizes them. This study explored both issues by investigating whether and how diagnostic reasoning is affected by salient distracting clinical features, i.e., features in a patient's history that are salient, because they are very suggestive of a particular disease, but are in fact unrelated to the present problem. Based on perception research,3 we hypothesized that these salient features would tend to catch physicians' attention, triggering pattern-recognition,4 causing errors when they are not related to the problem.

Methods: In a prior study, 34 internal medicine residents and 50 students of the Erasmus Medical Centre, Rotterdam, diagnosed 4 clinical cases by means of non-analytical and 4 by reflective reasoning. In a secondary analysis of these data, 5 internists followed a standardized procedure to independently evaluate the diagnoses, examining the nature of the diagnostic errors in relation to case features that gave rise to these errors.

Results: Among residents, reflective reasoning (M=2.09, 95%CI=1.77-2.40) led to a significantly higher number of correct diagnoses than non-analytical reasoning (M=1.71, 95%CI=1.37-2.04; p=.03). This higher diagnostic accuracy was associated with less incorrect diagnoses triggered by salient distracting clinical features (M=0.47, 95%CI=0.26-0.68) compared to non-analytical reasoning (M=0.85, 95%CI=0.59-1.11; p=.02). Students did not benefit from reflection to improve diagnoses.

Discussion: The confounding influence of salient distracting features was responsible for a substantial proportion of the incorrect diagnoses made through non-analytical reasoning. Reflection somehow 'protected' physicians against this negative influence, allowing them to make more correct diagnoses, whereas it did not help students overcoming the influence of salient distracting cues. The findings suggest that some cues in a patient's history may be so salient that they immediately attract physicians' attention, activating a diagnostic hypothesis(3). An error may occur when these features, despite salient, turn out to be unrelated to the problem. In contrast, reflection guides the physician's attention also towards other, less salient, cues that are relevant to the problem, activating scripts of other diseases(5), which generates other hypotheses. While verifying these hypotheses, physicians have the possibility to distinguish between relevant and irrelevant features, either dismissing the salient cues as irrelevant or integrating them with other less salient relevant cues into a new, and eventually correct, diagnosis. Reflection helped the residents, whereas it did not helped students. Gaining from reflection apparently depends on having in memory knowledge about the features that define a particular disease while making another unlikely, which allows for recognizing the correct diagnosis among alternative diagnoses.

Conclusions: Salient features in a case may misdirect diagnostic reasoning when they turn out to be unrelated to the problem, causing errors. Reflection helps physicians to overcome the influence of distracting features, when there is enough knowledge to discriminate between alternative diagnoses. These findings may contribute to the design of educational approaches for fostering students' and residents' diagnostic reasoning.

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7G/3

Does systematic viewing make radiological images go bad?

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Introduction: Medical students are taught to systematically inspect thorax radiographs, that is, inspecting all regions of the image in a fixed order. The goal is to visually search all portions of the radiograph and thereby prevent missing inconspicuous lesions. However, research suggests that experienced radiologists may not use systematic viewing (Kundel & Wright, 1969), instead their search is guided by experience: they know where to look. Rather, systematic viewing may only be effective for students, who lack experience to guide their search. No research has investigated systematic viewing directly. Hence, the aim of this study was to investigate expertise differences in systematic viewing. We used eye tracking equipment to record the observers' gazes while inspecting radiographs.

Methods: Eleven sixth year medical students, ten residents and nine radiologists inspected 5 conventional chest radiographs showing no abnormalities and orally provided a diagnosis while their eye movements were recorded. Each radiograph was divided in 21 regions such as the pleura, heart and sinuses. A fixation happens when the eye is relatively still and takes in information. The number of fixations in each area was counted to measure which areas were missed (i.e. no fixations in that area).

Results: Expertise influenced whether radiographs were correctly identified as normal, $F_{(2,27)}=2.91$, p=.07. Post-hoc tests revealed that students (M=74.55%, SD=18.09) scored lower compared to radiologists (M=91.11%, SD=14.53; p=.08), while residents' scored not significantly differently from the two other groups (M=85.50%, SD=13.83). In general, all groups had relatively high identification rates.
Expertise also influenced the percentage of regions missed ($F_{(2,27)}=4.29$, p=.02. Post hoc tests revealed that students missed significantly less regions (M=13.00%, SD=5.83) compared to radiologists (M=25.89 %, SD=12.20; p=.02). Again, residents did not differ significantly from the other groups (M=16.50 %, SD=11.41). The same pattern was found across all five cases ($F_{(8,108)}=1.23$, p=.29). No significant correlation between percentage correct and percentage of regions missed, controlling for expertise level, was found, r = .04, p = .84, indicating that completeness of inspection is not necessarily related to performance.

Discussion: Search errors account for 30% of all errors, even for experienced radiologists (Wood, 1999). Education tries to

reduce this figure by teaching systematic viewing. Radiologists, residents and students were found to inspect radiographs systematically across five cases. However, this did not mean that all regions on the radiographs were inspected. Students scanned most of the radiographs, but radiologists missed on average a quarter of all regions. Still, they performed better than the students. Hence, they knew where to look. This is in line with other research showing that a hallmark of expertise is efficiency: experts know where to find relevant information while students have to search for it.

Conclusions: This study suggests that - in disagreement with common believes - systematic viewing does not necessarily mean inspecting the entire radiograph, which in turn, does not guarantee a higher diagnostic accuracy.

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7G/4
Patient Driven – Putting patients at the Heart of Clinical Education

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Introduction: Patients and clinicians have recognised the importance of the patient experience and that the nature of the patient-clinician relationship should be collaborative. Through the educational underpinnings of co-constructed knowledge, combined with patient appropriation of learning artefacts a novel educational modality, Patient Driven simulation was developed. This is a methodology in which patient-clinician interactions are conceived, designed, written, delivered and evaluated by patients.

We explore this novel approach that gives patients access to human patient simulation and allows them to drive the production of learning materials and objectives. We observed the nature of the learning that occurred when clinicians took part in these educational episodes. We also sought to ascertain the impact of the experience on the patients directly involved.

This research asks the question; does Patient Driven education produce different learning outcomes when compared to clinician driven, and if so what are those differences?

Methods: Fifteen patient advisors, with 400 years of collective experience of living with Type 1 Diabetes Mellitus (T1DM), wrote the simulation scenarios. To minimise diluting the patient voice, an independent researcher (also a patient with T1DM) coordinated communication between advisors and simulation experts. Patients' aims when creating the learning objectives were to address perceived deficits in clinicians' understanding, while representing patient perspectives. Three patient advisors were also faculty, facilitating as patient voice, actors and post-scenario debriefing in which clinicians reflected upon performance and

explored changes in practice. Qualitative data were collected from clinicians and patient faculty, using questionnaires and focus groups, and analyses were thematic in nature.

Results: Patients and clinicians reported a new appreciation of each other's perspective. Clinicians noted that patients' perspectives, as experts in their own condition, were valuable, and recognised the long term impact of their clinical interactions. They noted that as simulations focused more on patient experience they felt less contrived and more like real clinical encounters. The patient faculty were enthusiastic that this 'radical' model meant they felt able to 'speak up and were listened to'. Overall patient faculty found the experience 'emotionally challenging' but 'positive and rewarding'. The clinical faculty reported deeper understanding of the patients' perspectives.

Discussion: The Patient Driven model facilitates delivery of the patient voice and patient perspective directly into clinical education. This changes the tone of the learning from clinician-led to patient-led. Everyone appreciated the value of the patient experience and its' contribution to a new approach to the patient-clinician relationship. Challenges identified included managing the impact on patients' time, emotional and financial resources.

Conclusions: Traditionally, scenarios are written by clinicians who also set the learning objectives. The Patient Driven model ensures that the patient is at the centre of the clinical education interaction. Although claims of patient-centric education have been made, in our opinion none do justice to the patient perspective. By involving patients in every aspect of simulation-based education, and in particular in the setting of learning objectives, the learning is enriched. This can lead to enhanced collaboration between clinicians and patients, and improve not only patient experience, but ultimately health outcomes.

7H Short Communications: Continuing Professional Development 2

7H/1
Educating physicians in meaningful use of information technology for medication management (MMIT): a conceptual framework

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Background: To take full advantage of medication management information technology (MMIT) physicians should be appropriately educated. Since little is known about optimal educational design, we investigated which factors influence MMIT-use.

Summary of work: Twenty-two physicians in four hospitals using different MMIT-systems were observed. Data were categorized. To interpret the data we investigated the fit with existing theories, namely (a) integrative model of behavioural

prediction, (b) 4 Component/Instructional Design model, (c) theory of trust, (d) socio-technical model.

Summary of results: We propose a conceptual framework, combining and elaborating above theories. Meaningful MMIT use appeared to be determined by (1) knowledge & skills regarding MMIT-use (procedural knowledge, problem-solving knowledge, routines, and skills to adopt MMIT into workflow, (3) intention to use MMIT, influenced by trust in MMIT, social norms and self-efficacy, and (4) the environment, such as usability.

Conclusions: Our conceptual framework allows for theoretical based design of MMIT-education.We surmise that knowledge and skills are most effectively trained using authentic whole tasks. Additionally, intention to use MMIT should be addressed, including careful calibration of expectations, role-modelling to set a social norm, and promotion self-efficacy using cases with increasing difficulty. Environmental factors clearly limit educational opportunities.

Take-home messages: MMIT-education should proceed beyond procedural knowledge.

7H/2
Record reviews to recognise potential performance issues in health practitioners

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Background: The National Clinical Assessment Service (NCAS) advises UK employers who have concerns about the performance of established health professionals. A clinical record review (CRR) can be a proportionate response when concerns have been expressed about a practitioner and more information is required to determine significance.

Summary of work: Groups of clinical specialists and educationalists discussed the criteria necessary to produce a report from a reliable CRR using an iterative process. This included developing instruments for recording the results of the record review and guidance for analysing the data and writing a report that is legally defensible. Although following the same basic structure, the recording instruments were tailored for each discipline. The process was trialled by members of the working groups using colleagues' records.

Summary of results: Issues identified and addressed included: Validity including how to sample records to reflect scope of practice but without bias; Limitations; Reliability including sample size and number of reviewers; Ensuring patient confidentiality and consen; Negotiating terms of reference with the commissioning body; Standards informing judgements; Training and accrediting reviewers; Quality assuring reports.

Conclusions: Complex issues need to be resolved to ensure that there is sufficiently reliable information from a CRR to make decisions about a practitioner's performance.

Take-home messages: The key to success is trained reviewers.

7H/3
How do doctors collaborate according to one of their collaborative partners?

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Joanne Fokkema (*Sint Lucas Andreas Hospital, Education, Amsterdam, Netherlands*)
Cees van der Vleuten (*Maastricht University, of Educational Development and Research, Faculty of Health, Medicine, and Life Sciences, Maastricht, Netherlands*)
Albert Scherpbier (*Maastricht University, Institute for Medical Education, Faculty of Health, Medicine, and Life Sciences, Maastricht, Netherlands*)
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Background: In their practice, doctors frequently collaborate with professionals from other disciplines. However, doctors' collaborative performance is not routinely evaluated from the perspective of collaboration through partners although this could provide valuable information for the (continuing) education of doctors.

Summary of work: In this study, data of midwives' perspective on points of improvement in gynaecologists' performance were analysed. Specific data on collaborative performance were selected and analysed using a template based on a model for interdisciplinary collaboration containing ten factors within the interrelational (between teammembers) and interorganizational domain (within an organization) of interdisciplinary collaboration. New factors were added to the template if necessary.

Summary of results: According to the midwives the factor mutual acquintanceship (knowing each other professionally), connectivity (e.g. interdisciplinary meetings), and formalization tools (e.g. the existence and use of protocols) were appointed to be in need of improvement in the collaborative performance of gynaecologists. A new found factor, hierarchy, was added to the template.

Conclusions: Current collaboration between gynaecologists and midwives in the Netherlands is according to midwives to be improved on several factors inside and outside the interrelational and organizational domains of interdisciplinary collaboration. This evaluation by partners about collaboration gives clues on how to improve the collaborative performance of doctors.

7H/4
Are there key characteristics of poorly performing doctors? What do workplace based assessments tell us?

Nick Brown (*National Clinical Assessment Service (NCAS), Assessment, London, United Kingdom*)

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AMEE 2012

Pauline McAvoy (*National Clinical Assessment Service (NCAS), Assessment, London, United Kingdom*)
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Background: The National Clinical Assessment Service (NCAS) advises UK employers who have concerns about the performance of established doctors across all primary and secondary care specialties. Sometimes a workplace-based performance assessment conducted by a team of trained assessors is necessary.

Summary of work: NCAS has undertaken performance assessments involving observation of practice, record review, case based assessment, contextual assessment as well as health and psychological assessment for over 10 years. Data is gathered about concerns at referral and again at assessment giving a comparison between suspected and identified.

Summary of results: Data is presented from over 3400 referrals. This enabled identification of areas of difficulty by domain of Good Medical Practice. This is then compared with data from 50 consecutive recent assessments giving a comparison between anticipated and observed practice difficulties. The similarities and differences between the outcome of assessment and the information available at referral are highlighted. The application of these findings for training and remediation programmes for doctors undertaking revalidation is discussed.

Conclusions: The full assessment of performance reveals key characteristics of doctors with performance problems across the range of technical, behavioural and contextual elements fundamental to medical practice across primary and secondary care which may be different to those expected.

Take-home messages: What is seen at assessment is not necessarily what you expect from what you already know about an individual.

7H/5
A Canadian Study Evaluating Long-Term Impact of a Multifaceted Learning Program

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Background: Management of complex diseases like CKD represents a burden for medical organizations. International societies recommended implementation of large scale teaching programs for PCPs. The P.R.E.V.E.N.I.R. PROGRAM measured the long-term impact of CME on clinical behaviour of 1000 Québec PCPs.

Summary of work: Four workshops and a software were developed. From 2009 to 2011, Group 1 attended the 4 workshops supported by the software; Group 2 attended 1 or 2 workshops (no software). Samples of 50 physicians from both groups and a control group were evaluated before (T0), during (T1) and after (T2) the program.

Summary of results: Knowledge and clinical behaviour improved significantly in Groups 1 and 2 at T1. Benefits slightly enhanced in Group 1 and stabilized in Group 2 at T2. Practice profiles had no impact on results. No change occurred in the control group.

Conclusions: This extensive study showed long-term benefits on knowledge and clinical behaviour of PCPs for CKD management, at a cost of $1000 per physician. This beneficial CME model could be implemented for other chronic diseases and eligible for funding by government or corporate partners.

Take-home messages: Clinical behaviour in chronic diseases management can be modified by customized CME.

7H/6
Practice Based Small Group Learning for Continuing Medical Education in Wessex

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Background: Practice Based Small Group Learning (PBSGL) was devised at McMaster University in Canada over 30 years ago, and is used by over 5000 GPs in Canada. A team in Scotland ran a successful pilot of PBSGL in 2003, subsequent to which it has been taken up more widely, with over 1200 established Scottish GPs (one quarter) using PBSGL for Continuing Medical Education (CME).

Summary of work: One group of seven Wessex GP registrars ran four PBSGL sessions (two pre and two post qualification). A questionnaire was used before and after the pilot to assess the benefit of PBSGL as transitional CME for the participants.

Summary of results: There was a significant improvement in perceived knowledge, skill, attitude and behaviour.

Conclusions: Results support the research on PBSGL carried out in Scotland. It is shows newly qualified GPs found the sessions valuable in the transition to independent practice. The group continues to meet which helps to verify its success.

Take-home messages: PBSGL is a successful form of CME which can be used for GPs as they transition into independent practice.

7H/7
Career satisfaction and commitment among Taiwanese Pediatricians

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TUESDAY 28 AUGUST 2012

Der-Fang Chen *(Cathay General Hospital, Pediatric Surgery, Taipei City, Taiwan)*

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Background: With the concerns on the consequences derived from the pediatrician shortage in Taiwan, this study was to understand Pediatricians' perceptions toward career satisfaction and commitment.

Summary of work: A 17 item questionnaire of 5-point Likert scale that explores Pediatricians' well-being, commitment to work, and work satisfaction was constructed. The participants were from 89 Pediatric training institutions in Taiwan. There were in total 287 responses, including 195 males and 92 females, 180 pediatric attending physicians and 107 residents. Factor analysis was used to explore the structure underlying the 17 items. Internal consistency was determined by Cronbach's alpha.

Summary of results: None of the 17 items had a mean score >= 4. The items on personal life and financial benefits were perceived as the worst. Residents perceived significantly better than the attending physicians on the items of "staying with the job", "having support", and "personal growth". Factor analysis resulted in five factors, such as "commitment to their career", personal life, etc. The five factors explained for 67% of variance. The mean score of factors ranged from 2.43 to 3.59, with the reliability alphas from 0.60 to 0.85.

Conclusions: This study found Taiwanese Pediatricians were not satisfied with their jobs, and solutions to reduce pediatricians' workloads and enhance the commitment to their works were necessary.

Take-home messages: The career satisfaction in Taiwanese Pediatricians is deemed low.

7I Short Communications: Community Oriented Medical Education

7I/1
What's the added value of longitudinal GP placements?

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Background: Most undergraduate student placements involve brief rotations through a variety of specialties. Our 3rd Year students visit the same GP practice on 10 days spread across the year and study 2 patients' care in depth (Longitudinal Care Project), aiming to learn the key components involved in delivering longitudinal care. Textual analysis of coursework identified benefits and learning gains from visiting practices on a longitudinal placement.

Summary of work: Qualitative and quantitative content analysis identified self reported benefits and learning outcomes. Comparison with stated course aims and learning outcomes enabled consideration of the formal, informal and hidden curricula.

Summary of results: Reported issues correlated with the intended learning outcomes (e.g. team working, communication skills, patient-centred care and holistic care). A further 14 benefits were identified which highlighted the benefit of real patient learning in a longitudinal context and identified the informal and hidden curricula.

Conclusions: This piece of works demonstrates the expected and additional benefits of longitudinal GP placements including the development of practical competence and the necessary psychological attributes.This piece of work focuses on the context of chronic disease but the potential benefits extend beyond this.

Take-home messages: The added value of longitudinal placements should be considered when curriculum planning.

7I/2
Do undergraduate Longitudinal Integrated Clerkships have long-term career impact? A decade report from The Rural Clinical School of Western Australia

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Background: Longitudinal integrated clerkships (LICs) are of interest not only because of their educational value but also because they may have long-term workforce impact. In Australia, the LIC model has been adopted as a strategy to redress rural workforce shortages. The Rural Clinical School of Western Australia (RCSWA) has been embedding medical students with primary care physicians in rural / remote settings model since 2002.

Summary of work: After graduation, all consenting RCSWA alumni were contacted annually by email and telephone for a report on their workplace location and vocational choice.

Summary of results: Of 257 graduates from 2002 to 2008, 221 were contacted regarding their postgraduate year one, of whom 110 (50%) had done a rural intern rotation. At each subsequent postgraduate year up to postgraduate year eight, a range of 34 - 50% of contacted graduates returned to rural locations. Their entry into vocational colleges General Practice as the earliest and most frequent decision, with

other disciplines successively added at later postgraduate years.

Conclusions: Participation in rural LIC effectively recruits junior doctors back to rural training. College affiliations indicate that rural LIC influences vocational choice towards the generalist disciplines.

Take-home messages: Longitudinal integrated clerkships in rural Western Australia have long-term workforce impact.

7I/3
"Specialist CBME": An exploration of the effectiveness of teaching specialty subjects in General Practice

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Safia Zaffarullah *(Barts and The London, Queen Mary School of Medicine and Dentistry, Institute of Health Sciences Education, London, United Kingdom)*

(Presenter: Ima Sasikumar, Kings College London School of Medicine, Department of Primary Care and Public Health Sciences, London, United Kingdom, ima.sasikumar@kcl.ac.uk)

Background: Undergraduate medical curriculum has seen a major shift towards a more community based medical education (CBME) owing to recommendations by the GMC's Tomorrows Doctors in the UK. Barts and The London School of Medicine and Dentistry and King's College London School of Medicine (KCLSoM) are two of the many medical schools across the UK to implement these changes into their curricula. However there are vast differences between the two institutions in the delivery of CBME. The fourth year curriculum at Barts and the London SMD entails one or two week general practice (GP) attachments for each specialty along with hospital placements. In contrast, fourth year students at KCLSoM have no GP attachments, but rather six structured community study days in obstetrics and paediatrics.

Summary of work: Research was conducted to explore the effectiveness of teaching specialist subjects to undergraduate medical students in the GP setting. Semi structured interviews with GP tutors at Barts and The London SMD and KCLSoM allowed for a comparison on the perceptions of specialist CBME. Furthermore, this research provided an opportunity to explore opinions of current specialist CBME practices at both medical schools and possible areas for curriculum development.

Summary of results: This presentation reports on the findings of this study.

7I/4
Student researchers in the community – partnerships, tensions & achievements

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Christine McMenamin *(Monash University, Faculty of Medicine, Nursing & Health Sciences, Clayton, Australia)*
Nicky Peters (*Monash University, Faculty of Medicine, Nursing & Health Sciences, Clayton, Australia)*

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Background: Within Monash University's MBBS Community Based Practice program, students have undertaken 480 research projects for community organisations, introducing students to key research competencies.

Summary of work: The community organisations, projects, results and practices, and research processes taught to students were collated and analysed.

Summary of results: The students practised the research skills of question design, literature review, methodology development, ethics approval, fieldwork data collection, analysis of results, development of conclusion, recommendations and discussion, and publication of results through a conference poster. Content ranged across the areas of aged care, adolescent health, children and families, chronic and palliative care, disability services, drug and alcohol support, and mental health services. The students worked in partnerships with welfare agencies, schools, local government and community health services across the Melbourne area.

Conclusions: As an introduction to research for undergraduates this program provided much to learn from. Its positives lay with its experiential reality - learning about the messiness and reward of real world research; its negatives showed that constraints could tempt towards corner cutting and risked learning poor research practice.

Take-home messages: With care, community organisations and medical faculties partnering research into community health are capable of providing value for faculty, genuine contributions to community and valuable research experience and skills for undergraduates.

7I/5
Understanding medical students' experiences in an urban community-based medical education program

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Lucie Walters *(Flinders University , School of Medicine, Adelaide, Australia)*
Linda Sweet (*Flinders University, School of Medicine, Adelaide, Australia)*

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Background: The Onkaparinga Clinical Education Program (OCEP) was established in 2009 by Flinders Medical School as an innovative longitudinal, community-based clinical experience for penultimate year medical students. It is based in an outer metropolitan area of South Australia. In 2011 OCEP became a hybrid experience consisting of 20 weeks in longitudinal general practice and emergency department attachments, 12 weeks in community hospital specialties and eight weeks in a tertiary hospital. A year-long academic program of small group learning supported the clinical activities.

Summary of work: Student evaluations of the programs from 2009 to 2011 were examined. Findings will be presented together with an overview of emergent themes.

Summary of results: Student evaluation was generally positive in all years and areas. Students appreciated interested teachers, but were not satisfied if placements were too busy, too quiet or only observational.

Conclusions: The OCEP community-based medical education program has been well accepted by students as a valuable clinical learning year. Further research will clarify whether student satisfaction with community placements correlates with future locations of work.

Take-home messages: Urban community based clinical placements coupled with small group longitudinal learning is well accepted by medical students.

7I/6
Going rural: an analysis of the first year of implementation of an innovative medical education model

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Background: In 2011, eight final-year medical students from Stellenbosch University commenced their yearlong rural clinical training following either the traditional discipline-based clinical rotation programme at a regional hospital or the longitudinal integrated model at a small, district hospital.

Summary of work: This benchmarking study, supported by the SU Rural Medical Education Partnership Initiative, undertook to determine the success of the first iteration of the programme. The formative evaluation adopted a mixed methods approach. In-depth interviews with different stakeholders and a focus group interview with home-based carers, were conducted. Comparative analyses considered the academic results of the rural based students versus students at the central hospital.

Summary of results: Students described their enhanced self-confidence and improved skills explaining how the experience had encouraged self-study. Preceptors described their personal learning experiences – sentiments that were echoed by health care workers on the rural platform. Outreaches to local clinics were specifically valued. The comparative analyses highlighted trends which require further exploration.

Conclusions: Creating an academic hub supporting clinical training at regional or district hospitals offers opportunities that extend beyond the rich student experience it provides.

The role of community based activities in heightening social awareness is considerable.

Take-home messages: Implementing innovative education models at rural sites can result in learning experiences that are potentially transformative for all concerned.

7I/7
Preparing medical students for exit: Does clerkship track (rural integrated community or rotation-based) make a difference?

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(*Presenter:* Wayne Woloschuk, University of Calgary, Undergraduate Medical Education, Health Sciences Centre, 3330 Hospital Drive NW, Room G701b, Calgary T2N 4N1, Canada, woloschu@ucalgary.ca)

Background: The University of Calgary Medical School 3-year curriculum identifies educational exit objectives students should achieve by the time they graduate. A recent initiative known as the rural integrated community clerkship (RICC) has provided some clerks the opportunity to complete 32 weeks of training in a rural community. In this study we compared students in the RICC program to their peers in the rotation-based clerkship on perceived preparedness for each objective.

Summary of work: We electronically administered a year-end survey to all third-year students in the classes of 2009, 2010 and 2011. Students rated their perceived preparedness (1=very under prepared; 2=underprepared; 3=prepared; 4=very prepared) for each objective which served as the dependent variable. We analysed the data using a one-way (RICC x rotation-based) Anova.

Summary of results: Data were collected from 27 (79%) RICC students and 304 (77%) rotation-based students. Overall mean preparedness scores ranged from 2.75 (identify and investigate opportunities for research) to 3.70 (communicate effectively with patients, families and staff). Most objectives had overall means ≥ 3.0. Analysis revealed that RICC students, compared to their rotation-based peers, reported significantly higher mean scores on: 1) applying a comprehensive bio-psychosocial approach, 2) correctly identifying a patient's medical problem, 3) formulating a management plan and 4) incorporating concepts of disease prevention and health promotion.

Conclusions: RICC students self-reported better preparation on several objectives.

Take-home messages: The RICC program offers educational opportunities that may, in some ways, better prepare students for exit.

7J Short Communications: Portfolios

7J/1
Personalised video portfolios: An innovative approach to encouraging practice and self-appraisal of clinical skills

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Background: The use of video in the teaching and assessment of clinical skills is increasing as bedhead cameras are installed in simulated wards. These are designed to support students learning during bedside teaching and to encourage self-assessment and-provide feedback of performance.
Summary of work: Using a personalised video portfolio students at St Andrews are required to provide video evidence of practice of clinical skills. Between formal teaching session students are given the task of recording themselves practicing the different clinical skills. They are encouraged to review their video performance against the taught protocol bookmarking sections of the video to reflect on their performance. Students create playlists within their portfolio and share these and individual videos with tutors or other group members for comment and appraisal.
Summary of results: Initial feedback demonstrates that both staff and students perceive that the video portfolio has an important role in improving performance of clinical skills. This presentation will discuss the impact and feedback from this programme.
Conclusions: Personalised video portfolios allow students to build an enduring, longitudinal and transferable record of competence in clinical skills performance.
Take-home messages: When used creatively and appropriately a personalised video portfolio offers exciting possibilities for evaluating performance and providing feedback leading to an improvement in clinical skills.

7J/2
Clinical portfolio as an authentic assessment of clinical competency

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Background: Performance assessment, being subjective, demands observational skill and as we climb higher the Miller's pyramid, the authenticity escalates. In order to allow objectivity in performance test, Downing (2009) expressed the value of portfolio being potentially authentic in assessing students' competency. A myriad of benefits is gained from the use of portfolio in professional educational activity.
Summary of work: Malaysian Qualifying Framework (MQF) similar to the European Qualifying Framework (EQF) focuses on 8 domains of learning outcomes identified as knowledge, practical skills, social skills and responsibilities, values, attitude and professionalism, communication, leadership and team skills, problem solving and scientific skills, information management and lifelong learning skills, managerial and entrepreneurship skills. These specified learning outcomes resemble clinical competency as defined by the literature (ABIM, 2002; Epstein and Hundert, 2002; Boursicot, 2010).
Summary of results: A clinical portfolio was developed to measure clinical competency defining the 8 domains of learning outcome. This portfolio is derived from "Omnibus" assessment portfolio suggested by Steven Downing where multidimensional content of learners' accomplishment is provided over time and justifies the learning objectives. The 8 domains of learning outcomes will be assessed through the clinical portfolio by attaching evidence of clinical activity as a basis to measure clinical competency. Criterion referenced assessment was developed using the same 8 learning outcomes to assess the students' competency level.
Conclusions: Clinical portfolio could be a valuable tool if the learning outcomes are written explicitly.

7J/3
Medical students' narrative reflections: a window into professional identity formation

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Background: At McMaster University, undergraduate medical students create a portfolio of reflective narratives based on guided prompt questions. Faculty members in the "Professional Competencies" curriculum provide feedback. These student narratives provide a window into the development of students' professional identity formation.
Summary of work: We studied 65 reflective portfolios 604 individual reflections), using Reismann's method of thematic narrative analysis. A typology of codes was developed and common themes in the reflective pieces were identified, leading to a descriptive framework of professional identity formation.
Summary of results: The narratives provided a richly layered portrait of professional identity formation among medical students. Major themes emerging from the narrative analysis included: prior experiences, role models, clinical experiences, the formal and hidden curriculum, self understanding, and outside perceptions.
Conclusions: Our narrative inquiry provided insights into factors that influence professional identity formation among medical students. Our work adds to a body of narrative

analysis that provides insight into complex human-centred topics such as the formation of professional identity.

Take-home messages: Narrative reflections can provide a window into students' emerging professional identity formation. As they integrate their academic learning with experiences in the clinic, students begin to step into their newly formed professional identities. Faculty members who read the narratives are privileged to play a role in this process.

7J/4

The relation between reflection and other competencies in a portfolio-based undergraduate social-dentistry course

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Background: Although the ability to reflect is increasingly recognized as an important attribute for healthcare professionals, empirical evidence demonstrating the effect of reflection on performance remain scarce. This study describes the relation between reflection and other demonstrated competencies in a portfolio-cased educational approach in dental students.

Summary of work: Within a social dentistry course students were asked to develop and perform an oral promotion project at a local organization and gather evidence about their ability to 1. describe an oral health profile of the target group, 2. relate theoretical models to the experienced work of local organizations, 3. develop a project based on scientific evidence, 4. demonstrate the added value of multi-, inter and/or transdisciplinary work. In addition they had to write a reflective report about their course experiences. Both reflections and evidence were scored and their relation was analyzed using linear regression analysis.

Summary of results: Reflection scores significantly predicted the other competencies in all investigated years (2008-2009; 2009-2010; 2010-2011), explaining between 10.7% and 25.5% of the variance.

Conclusions: Results could suggest that the underlying metacognitive skills of reflection (noticing, processing and planning altered action) also have influenced the other course related competencies.

Take-home messages: Results in this study demonstrate a significant relation between reflection and other competencies in portfolio based education and are in line with the current perspective on reflection as attribute for performance.

7J/5

Improving Reflective Practice in Medical Students – Measuring the Change Through the Use of Portfolios

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Background: Portfolios feature as a method of assessment in many forms of education including medical education. Portfolios are intended to foster critical reflection and reflective practice. The Sydney Medical Program has been using portfolios for 10 years but no attempt had been made to verify our students' capacity for reflection as demonstrated through their portfolios.

Summary of work: Using qualitative and quantitative methods we measured 329 first year students' use of reflective skills as demonstrated through their written portfolios, and their response to a survey using a 5 point Likert scale. Analysis also included comparison of the researchers' assessment against those given by a large number of Faculty members.

Summary of results: Analysis showed that the majority of students had limited reflective abilities as displayed in their first year portfolios. Alarmingly, analysis also revealed that many Faculty members were unable to accurately assess the quality of reflection in the portfolios (therefore unable to guide the students in improving their reflective abilities).

Conclusions: Despite their extended use, the first year portfolios failed to demonstrate competence in reflective skills.

Take-home messages: Successful portfolio use in medical students requires effective pedagogy, structured learning experiences and ongoing academic training and support.

7J/6

Assessing NHS ePortfolio behaviour: variations in the online activity patterns of doctors as they progress through training

Timothy R P Brown (*NHS Education for Scotland, NHS ePortfolio, Edinburgh, United Kingdom*)

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Background: The NHS ePortfolio is used by over 20,000 training doctors in the UK ranging from undergraduates through to specialty grades. We wished to determine what differences in ePortfolio activities are observed for doctors as they progress through training.

Summary of work: Activity data was analysed to understand the behaviour of trainees immediately following log in. Activities were grouped as: • work-based assessments

(WBAs); • curricula; • progression; • reflection; • house-keeping. We compared the activity of three stages of training: Foundation, ST1/ST2, and ST3 onwards. Three patterns of activity were identified (1) only WBAs, (2) WBAs plus additional activities, or (3) only non-WBA activities. Significant differences in activity patterns were observed between the 3 trainee groups, with senior trainees prominent in non-assessment activities.

Summary of results: Foundation doctors are asked to perform many more WBAs than their senior colleagues which is reflected in their predominantly WBA-based activities, while the ST3+ trainees perform 3 times more non-assessment related tasks than Foundation trainees, and twice that of ST1/ST2 trainees.

Conclusions: A trainee's purpose for logging into their ePortfolio reflects the requirements of their training programme, the extent of this which has been quantified here.

Take-home messages: Understanding why trainees access their ePortfolio can help us design functionality to improve user experience and explore ways of encouraging broader engagement.

7K Short Communications: Accreditation of the Student and Overseas Doctor

7K/1
Association between the Quality of Medical Education Accreditation Systems and International Medical Graduates' USMLE Performance

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Background: A system of accreditation should ensure high quality educational experiences, although research on effectiveness, including performance outcomes, is limited.

Summary of work: The purpose of this study is to examine the association between the quality of medical education accreditation and student outcomes. The accrediting systems in 18 countries were given a quality grade (A or B) based on pre-determined criteria. Performance on United States Medical Licensing Examinations (USMLE) of physicians educated in these countries was compared by quality of accreditation systems.

Summary of results: Over 10,000 physicians educated at schools accredited by agencies that received a grade of A, and over 20,000 educated at grade B schools, took at least one USMLE exam during the study period (2006-2010). Physicians attending medical schools accredited by systems that received a quality grade of A performed better on USMLE Step 1 and Step 2 clinical skills as compared to physicians attending medical schools that are accredited by a system receiving a grade of B. For Step 2 clinical knowledge, the results were reversed.

Conclusions: Accreditation quality is positively associated with performance for two of three exams.

Take-home messages: Further research is needed on other quality indicators, outcome measures, and with additional populations.

7K/2
International variation in performance by clinical discipline and task on the USMLE Step 2 Clinical Knowledge (CK)

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Background: This study investigated country-to-country variation in performance across clinical science disciplines and tasks for examinees taking USMLE Step 2 CK during 2008-2012 academic years.

Summary of work: Percent-correct discipline and task subscores for 88,500+ examinees taking Step 2CK for the first time during 2008-10 academic years were retrieved for analysis. For each examinee/subscore, we computed the difference between the subscore and mean performance of examinees at US/Canadian schools and tabulated mean differences by country of medical school; 1000-5000 unique items contributed to calculation of mean differences.

Summary of results: Controlling for overall performance, international medical graduates (IMGs) performed best in Surgery (+0.9%) and worst in Psychiatry (-4.0%) relative to US/Canadian examinees; for clinical tasks, IMGs performed best in Mechanisms of Disease (+1.4%) and worst in Prevention (-1.7%). Middle East and Asian IMGs showed this pattern much more strongly; it was present to a lesser degree for from European IMGs and absent for Caribbean IMGs.

Conclusions: Possible reasons for the country-to-country variation include curriculum differences, variation in clinical experience, differences in standards of care, emphasis on preparing students to take USMLE, or other factors. Further research is needed to better understand explanatory factors.

7K/3
The Southern Health "IMG student program" - report on 6 years experience

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Background: Because International Medical Graduates (IMGs) were often poorly prepared for work in the Australian hospital system, Southern Health implemented in 2005 an innovative, intensive, truly hands-on, 6 months training program for IMGs who have not already worked in Australia, to ensure that they are appropriately orientated and prepared to practice safely in the Australian Health Care System and to facilitate successful employment as medical officers.

Summary of work: During the course the IMGs undertake three supervised clinical rotations (emergency, medicine and surgery), participate in weekly educational sessions and simulation training. We monitor their progress with a logbook and an extensive formative and summative assessment in each rotation.

Summary of results: We are now running our 14th course having adapted the structure in response to new developments like the Australian Curriculum Framework for Junior Doctors (2006) and AMC orientation guidelines (2007) as well as internally identified needs. We report about the continuous improvements, the evaluation of the program and the benefits it has provided over 6 years.

Conclusions: We believe that the program has applicability to other hospital settings although it requires a certain level of organisational commitment for successful implementation.

7K/4
The Clinician Assessment for Practice Program: A Seven Year Review

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Lynda Campbell (Nova Scotia Department of Health and Wellness, Physician Services, Halifax, Canada)
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Background: The Clinician Assessment for Practice Program (CAPP) program was created by the College of Physicians and Surgeons of Nova Scotia (CPSNS) in 2005 to address the shortage of family physicians. The CAPP, a three part program assesses IMG physicians for practice readiness without formal Canadian training.

Summary of work: Both quantitative and qualitative methods were used to assess outcomes against stated program goals. The CAPP assessment is a three-hour therapeutics exam and 12 station OSCE. Physician examiners

are recruited and oriented with an online video exercise prior to exam day orientation. A 13 month mentorship begins with a week-long orientation program. Integration is further facilitated by the mentor who provides guidance and assessment.

Summary of results: This integrated support has led to CAPP physicians achieving almost 100% success rate in certification with the College of Family Physicians of Canada. Retention remains a challenge. IMGs leave the province due to the perceived lack of professional and opportunities for their families and in pursuit of specific training opportunities. To resolve the retention issue, collaborative partners, in addition to the CPSNS are required.

Conclusions: The CAPP has developed and implemented a comprehensive program for IMGs successful integration into Canadian practice. Other IMG programs may benefit from the CAPP experience.

7K/5
The experience of non-UK EU trained anaesthetists starting work in the National Health Service (NHS) in London: how can we make life easier and safer?

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Background: European health systems depend increasingly on the services of doctors who obtained their primary medical qualification from other countries in the European Union (EU). This is particularly so in the UK. A large number of doctors who come from outside the UK have been trained in non-English speaking contexts and face the challenge of working in a foreign cultural and linguistic environment. Little is known (a) about the challenges these doctors face in the new system on arrival (b) the impact of existing current induction programmes to ease transition into the NHS and (c) and how their experience differentiates from UK-trained doctors.

Summary of work: We conducted two series of one-to-one interviews with EU trained anaesthetists new to the NHS, and UK trained anaesthetists new to our hospital. We also administered a questionnaire constructed on themes we identified in the literature. These were part of a preliminary needs analysis to develop a simulation-based training induction programme for EU trained anaesthetists.

Summary of results: Themes emerging included strategies used for integration into the system and personal learning, language and communication, knowledge of hospital systems, and issues regarding equivalence of training and status.

Conclusions: There is a paucity of research into induction programmes generally and whether they meet the needs of doctors trained outside the UK in particular.

Take-home messages: If induction programmes are to be successful in promoting excellence we need to understand how foreign doctors respond to them and what areas need further development.

7K/6
International medical students and their quality of life whilst studying in New Zealand

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Background: The increased globalisation of education has created opportunities for universities in Australasia. It has been noted that international students are affected by issues of safety, security, and quality of life.
Summary of work: 549 medical students early in their clinical training responded to the World Health Organisation Quality of Life questionnaire (BREF version). The target variable was enrolment status (international; domestic). Other variables included: time of investigation (2009; 2011), gender, year of enrolment, age and ethnicity.
Summary of results: Ratings for the social relationships and environment quality of life domains were lower for international students. Facet scores in both domains indicated that international students underrate their levels of quality of life (in 9 of the 11 facets).
Conclusions: The findings of this study suggest that the International medical students are likely experiencing problems related to developing social relationships and coping with the environment, indicating a need for more sensitive and competent modes of intercultural communication and improving service delivery.
Take-home messages: Focus needs to be applied to the two concerning areas of quality of life identified in this study: social relationships and environment. Given the fiscal and educational advantages associated with enrolling international students, it is imperative that Universities apply pastoral measures to improve their quality of life experiences.

7K/7
The psychological well being and sociocultural adaptation of foreign medical students in Romania

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Background: Although the growth in the international student population is a positive development, research investigating the adaptation of international students has consistently reported that students often struggle to adapt to life in the host country. Culture shock is a form of psychological distress associated with migration. Social support has been identified as significantly related to the onset, course and outcome of many psychological disorders.
Summary of work: The aim of this study was to examine the relationship between culture shock and social support, in terms of size, diversity of the social network and quality of support received, in foreign medical students, in Romania. A total of 400 foreign students completed 3 self-administered questionnaires: Loneliness Questionnaire, Social Support Questionnaire, General Health Questionnaire (GHQ-30). A comparison sample of 200 Romanian medical students were also recruited.
Summary of results: Culture shock is associated in most cases with high levels of psychological distress.
Conclusions: Social support is an important factor associated with the degree of culture shock and should be taken into consideration in order to protect against or help to overcome this kind of psychological distress experienced by migrants. Adequate counseling should be provided by educational institutions, taking into consideration the way social factors are associated with migrant students' mental health.
Take-home messages: It is very necessary to support foreign students in their adaptation process.

7L Short Communications: Simulated Patients

7L/1
Large Scale Development of Clinical Skills Learning Based on Standardised Patients for Year 3 Medical Students at the Nantes Medical School, France

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Background: In French medical schools, clinical skills are widely based on bedside learning with real hospitalized patients. However, the increasing number of students associated with the respect of ethics cause many learning difficulties. The purpose of this study was to introduce a new educational method using standardized patients (SP) in simulated ambulatory settings.
Summary of work: All the 240 medical year 3 students had to perform four ambulatory simulated consultations. For each consultation, the students had to solve a clinical situation

with typical complaint, history and physical examination, leading to a main diagnosis (pulmonary embolism, pneumothorax, post-phlebitis syndrome or pancreatitis). The SP were performed by ten professional actors. Students were assessed by SP for clinical (taking a medical history, clinical examination, diagnostic accuracy) and relational (empathy, discourse coherence, verbal and non-verbal communication) performances. A video-scoring was used to evaluate correlation between SPs' and external professionals' assessments. Motivation of students was also evaluated before and after the consultations.

Summary of results: 960 consultations have been performed during two weeks. In August 2012, we will be able to report the results of 1) clinical and relational performances 2) correlation between SP's and external professionals' assessments and 3) motivational levels before and after practising this new method.

Conclusions: Acknowledgements for financial support: Janssen, Urgo, Roche Foundation, Midmark, Amgen, Macsf, Equipsante, Medicalem.

7L/2
Learning from patient instructors

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Background: Patient instructors (PI) are patients with rheumatism certified to teach using their own joints and own life experiences. A prior interview study with physiotherapy and occupational therapy students, showed that in PI teaching sessions, content matter is complemented by provision of realism and the individual perspective on rheumatism, the pedagogical format is characterised by authenticity and intimacy in style of instruction and feedback, and the PI-student relation is characterised by balanced teacher-student power relations that allows students to be in the role of the learner.

Summary of work: The aim of the present study is to confirm, contradict or expand this conceptual framework. We conducted four group interviews with medical students. Method of analysis is a directed content analysis.

Summary of results: Preliminary data confirm the prior model and offer a couple of new themes concerning students' perceptions of learning from PIs. One tendency represents a positivistic mindset focusing on expectations of structure, rules, systems, results, exams etc. Another tendency represents a humanistic mindset, focusing on experiential learning governed by a patient-centeredness. These themes run through the data expanding issues of power-relations between patient and student.

Conclusions: Final results and conclusion will be presented at AMEE.

7L/3
Learning to think: Using human patient simulation to build critical thinking attributes

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Background: Solving virtual patient problems using human patient simulators (HPS) is believed to enhance critical thinking (CT), but little evidence supports this belief in nursing education. Although undergraduate nursing students have not completely acquired the metacognition essential for CT skill performance, affective attributes or dispositions leading to CT may be nurtured at this developmental stage using HPS.

Summary of work: We compared the impact of HPS on critical thinking dispositions for nursing students (N=88) with high (HiGp) and low (LoGp) HPS exposure. HiGp students had approximately 25 hours of clinical education using HPS; LoGp students had six hours. Outcome measures included overall and subscale scores on the California Critical Thinking Disposition Inventory (CCTDI).

Summary of results: Overall scores improved for HiGp compared with LoGp but the difference was not statistically significant (difference=4.48; p=0.42). We examined differences between pre and post intervention data available for HiGp only. Overall score differences were borderline 8.0 (-0.56,16.6), p=0.07. Further analyses of categorical subscale differences were undertaken and will be presented.

Conclusions: There is improvement in CT dispositions between students with high or low exposure to HPS, but the difference is not statistically significant.

Take-home messages: High use of HPS may build some CT attributes but further research is needed to confirm these results.

7L/4
A simulation-based course for pain management: An innovative and experiential approach to communication skills and the utilization of the biopsychosocial formulation in non-psychiatrists

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Background: Traditionally anaesthetists training in Pain Medicine develop an expertise in interventional pain management. Working in the pain clinic requires a biopsychosocial approach to patients but there is no formal training available.

Summary of work: A multidisciplinary faculty developed this course. Advanced communication skills and application of the biopsychosocial model were reviewed during workshops. These were further explored with simulated patients during pain clinic scenarios. The scenarios were videotaped, transcribed and reviewed to measure time spent on biological, psychological and social aspects of the consultation and whether the balance between these aspects improved with sequential candidates.

Summary of results: Three sequential attempts at each scenario by different trainees saw the mean time spent on biological aspects go down from 52% to 18%, psychological aspects increased from 10% to 24% and social aspects increased from 6% to 16%. We measured change in participants' self-rated confidence using a Visual Analogue Scale. 0=not confident, 10=very confident. • Confidence in communication skills improved from 5.6 (4.3 – 6.8) to 7.5 (6.2-8.0). • Confidence in using the biopsychosocial model improved from 5.1 (3.3-8.5) to 7.5 (6.4-7.8)

Conclusions: Trainees' confidence and the balance of the consultations improved as the scenarios were practiced and observed.

Take-home messages: Experiential learning through simulation improves trainees' confidence and ability to consult within the biopsychosocial model.

7L/5
How standardised patients award global scores in OSCEs: a qualitative study

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Background: Standardized patients (SPs) are often asked to award global scores on the humanistic aspects of a candidate's performance in an OSCE. However, little is known about the process by which SPs arrive at their mark.

Summary of work: Five focus groups of SPs, using a convenience sample, were used to collect data until saturation. Thematic analysis was carried out independently by three researchers using a grounded theory approach.

Summary of results: Four major themes contributed to their decision-making process: environment, relationships within the exam, preparedness for the task and expectations of the student's performance. Environmental factors included the

station itself, the rating scale and examiner fatigue. Relationship factors included first impressions, the sense of purpose derived from examining and a tendency to mirror the examiner's reaction. Factors relating to preparedness for task involved experience as an SP and technical aspects, such as the need for calibration. Lastly, expectations of performance were related to preconceptions about what makes a 'good' student, including their level of studies, appearance and technical performance.

Conclusions: In assessing students, SPs drew on their wider attitudes and experiences. SPs did not limit their assessment to humanistic traits but often included technical performance. Thus, SPs to some extent assessed a similar construct to examiners and this may help to explain the increased reliability associated with using SP scores.

Take-home messages: SP global scores are a useful adjunct but the process by which SPs award marks is complex and provides a challenge for training and standardisation.

7L/6
Friends with benefits - should medical educators involve the community in medical education?

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Suzanne Pitama (*University of Otago, Christchurch, Maori Indigenous Health Institute, Christchurch, New Zealand*)
Cameron Lacey (*University of Otago, Christchurch, Maori Indigenous Health Institute, Christchurch, New Zealand*)

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Background: The Maori Indigenous Health Institute at the University of Otago, Christchurch has utilized indigenous community members as simulated patients for the past 5 years.

Summary of work: This presentation utilises the case studies of 5 indigenous community members (collected as a part of an internal audit of curricula appropriateness) to explore and identify possible enablers and barriers of being involved in indigenous medical curriculum.

Summary of results: The five case studies identify that being involved in indigenous medical curriculum as simulated patients was a positive experience that not only enhanced the well-being of them but also of their extended families. As well as positive experiences, barriers were also identified, including the 'real life' personal experiences of the chronic illness based scenarios.

Conclusions: There are both enablers and barriers to the community becoming involved in medical education. These enablers and barriers are amplified if that community has a higher health burden of disease.

Take-home messages: Utilising a 'high risk' population within medical education provides not only an opportunity for students to learn, but also for educators and community to have a greater understanding of each other. This understanding allows for a community accountable approach to medical curriculum. This accountablility is paramount within indigenous medical curriculum.

7M Short Communications: eLearning: Virtual Patients

7M/1
Santa Fé: The Construction of a City in Virtual Reality as a Empowerment of Education in Family Health

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Background: The present tendency in medical education points to the use of new technologies, such as virtual reality. The UNASUS-UFCSPA Specialization in Family Health use a fictional city (Santa Fé) to link education to real practice protecting ethical issues by hypothesizing health contexts, as well as professional and patient characters.
Summary of work: Santa Fé presents all the structures of a real city. Its use and approval by the students have motivated the creation of its "virtual edification". 3D modeling process started with the city sketch using Google ScketchUp 8Pro. Common places were adapted from the 3D Warehouse library. The Health Services were developed with greater details, since students were already familiar with them through texts.
Summary of results: The elaboration process lasted one year and counted with a strong work on scenario characterization, which demanded a close search on the city's text history in order to find the visual characteristics to be modeled.
Conclusions: The converion of Santa Fé to virtual reality meets one of the Course objectives: provide veracity of the simulation of clinical cases in a countryside Brazilian city.
Take-home messages: You can with limited resources innovate in health education using virtual reality to empower the approximation between the theory and practice in distance education.

7M/2
Second Life, Second Thoughts: The use of Second Life as a 3D Immersive Development Platform for Medical Education

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David T. Stokes (*Memorial University, Medicine, St. John's, Canada*)
Stephen, N. Pennell (*Memorial University, Medicine, St. John's, Canada*)
Victor Maddalena (*Memorial University, Community Health, St. John's, Canada*)
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Background: Memorial University is developing a new medical curriculum which will be based on family scenarios. Memorial wished to employ a 3D immersive environment / Virtual World to help tell the family based scenarios.
Summary of work: We purchased an island in Second Life and hired a programmer, who worked with an educational technology team, to develop a virtual community that included a hospital with a physician clinic. Members of this virtual community were used as virtual patients in the clinic. We created pre-programmed avatars based on predefined roles including: Virtual Patients, Preceptor, Nurse, Receptionist. Medical students created their own avatar. The medical student avatar would pick up a chart from the receptionist and then enter the exam room to interact with the patient. The medical student avatar was run by a live person, all the other avatars were pre-scripted.
Summary of results: User interface (UI) is difficult to navigate, particularly for pre-scripted scenario based clinical activities.
Conclusions: Technology is promising but navigation is difficult (UI) and hardware requirements are very high.
Take-home messages: Continued research and innovation is warranted.

7M/3
Using a role-play simulation in Second Life to teach child psychiatric assessment: do undergraduate medical students perceive it as a useful learning experience?

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Background: Simulation is sparingly used in teaching psychiatry. Yet its standardisation of learning opportunities is

appealing for child psychiatry, where medical students get variable exposure. Furthermore, child psychiatry encompasses sensitive issues and risk, involving patients vulnerable by virtue of age and mental disorder. Simulation could provide safe and standardised learning environments.

Summary of work: Building on previous research, our study evaluated a novel small-group teaching session using Second Life – an online 'virtual world' – as a role-play simulation. We recruited ten medical students: students enacted a clinician avatar, the teacher an adolescent avatar with depression. Could Second Life deliver a 'good-enough' simulation? Other variables evaluated included: gender, ethnicity, experience with gaming and role-play. Research methodology involved questionnaires and a nominal group process.

Summary of results: Students overall reported improvements in various psychiatric skills; they rated its overall educational utility highly and found it less stressful than 'real-life' role-play. Primary concerns include the lack of fidelity relating to non-verbal communication. Statistical analysis showed a positive relationship between perception of simulator fidelity and experience of educational utility.

Conclusions: Students queried whether it adds value over other learning methods, but noted its positive potential for distance learning

Take-home messages: Second Life was able to deliver a 'good-enough' simulation to engage with and learn from.

7M/4
The introduction of authentic clinical problem-solving into Problem Based Learning, using interactive virtual patients: the impact on student behaviour and performance

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Background: St George's has replaced its conventional Problem-Cased Learning medicine course with interactive online virtual patients (VPs) that permit students to explore optional routes through patient cases, taking authentic management decisions, and dealing with the consequences of their actions. Studies were conducted which examined the impact of this change on students and tutors.

Summary of work: One study analysed student responses to problem-solving opportunities in authentically managing the patient case, and exploring the interactive resources. A controlled study considered the impact of the interactive resources on student performance in examinations.

Summary of results: Students became increasingly actively engaged where there were authentic problem-solving opportunities, in both patient management and interpretation of investigations. There were changes in individual and group behaviour, in the types of contributions that students made in PBL. The outcome of the controlled trial of exam performance will be presented.

Conclusions: Learners changed their behaviour when using interactive patient cases and resources, reflected in greater individual engagement with the case, in more collaborative working, and improved exam performance.

Take-home messages: Modern technologies can introduce true problem-solving opportunities to supplement traditional PBL, and provide students with a richer, authentic experience which is reflected in their change in behaviour.

7M/5
Designing virtual patients for medical undergraduates: a grounded theory study

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Background: Virtual patients are web-based representations of realistic clinical cases. International technical standards define what a VP is, allowing inter-operability and institutional collaboration. VPs have numerous design properties, with limited evidence supporting any one type. We set out to research how VP design influences learning.

Summary of work: This is a grounded theory focus group study. We reviewed the VP literature and open access VPs to identify design features. We incorporated them into two bespoke VPs produced for the study. Volunteer undergraduate medical students completed both VPs, and then participated in a one-hour focus group (n=6-8). We used iterative purposeful sampling as part of a constant comparative analysis, with open coding, axial coding, and subsequent theoretical abstraction. In total six focus groups were conducted (n=46). The research has institution ethics approval.

Summary of results: We have identified a central category and five sub-categories, which describe student interactions with the VP. We have incorporated them into a model describing three concentric layers and their relationships; student pre-conditions (inner); encoded and constructed VP activities (middle); and student change (outer).

Conclusions: Our results, grounded in the data, describe and inform how different VP design features influence learning.

Take-home messages: Educators can use our model to when considering how to develop or implement VPs.

7M/6
The relation between self-regulated learning and perceived benefit of web-based patient cases

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Background: Digital web-based cases allow for flexibility regarding when, where and how to study. Teachers are however urged to align activities to the intended learning outcomes. Consequently, in addition to freely available Internet resources, course-aligned materials are provided and made available to students. In order for students to benefit from this material a mixture of student self-regulation and teacher regulation is required.
Summary of work: Study strategies and perceived benefit of web-based patient cases were assessed by a questionnaire. The results were contrasted between three settings taking different approaches to teacher regulation of the case-activity.
Summary of results: We obtained 150 (78%) questionnaires. Both self-regulation and external regulation study strategies correlated positively with perceived benefit in the overall sample (rho=0.27, p<0.001 and 0.17, p<0.05, respectively). No correlation was found between self-regulation and perceived benefit in one setting with large teacher regulation and a negative correlation was found between external regulation and perceived benefit in a setting with loose teacher regulation.
Conclusions: Contrasting settings with different teacher-regulation approaches yielded knowledge on the interplay between self-regulation and teacher regulation of web-based patient cases.
Take-home messages: Web-based case study activities are situations that require both self-regulation and teacher regulation. The balance between these aspects needs consideration when planning web-based case activities.

7M/7
Computer-based case simulation is effective for training veterinary students to develop a fluid resuscitation plan and transferring this skill to an OSCE situation

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Background: A computer-based simulation was developed to provide veterinary students an opportunity to apply course-based content within the context of common clinical cases.
Summary of work: The management of diarrhea in calves and the steps for developing a fluid resuscitation plan (FRP) were presented in lecture format. Students were then randomly assigned to a paper-based or computer-based virtual animal patient case. One component of this case involved developing a FRP. A written post-test was administered (which included another FRP calculation). Transfer was tested two weeks later during an OSCE.
Summary of results: Twenty-eight second year veterinary students participated. Eleven of 14 (79%) computer-based and 2/14 (14%) paper-based students correctly calculated the post-test FRP. All students that correctly calculated the post-test FRP during the simulation successfully calculated the FRP problem presented in the OSCE.
Conclusions: When compared to paper-based cases, computer-based cases appear to lend themselves better for learning and retaining step by step skills like calculating fluid plans. The computer-based case featured the opportunity to compare the student response to the correct response at each step of the calculation. This option was not feasible in the paper-based case.
Take-home messages: Computer-based case simulation appears to be effective in training veterinary students to develop and transfer clinical skills to OSCE situations.

7N Workshop: Lecturing well: an evidence-based approach

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Background: Lecturing is an everyday medical school activity, which has as many opponents as proponents. Scholarly reviews of lecturing, however, are lacking. We have conducted a realist literature review to develop a general theory of lecturing, grounded in empirical research, from which we have generated evidence-based guidance for lecturers and program managers and a research agenda. This workshop will help participants develop new insights into their lecturing skills.
Intended outcomes: Participants will: • Identify their present understandings and assumptions about lecturing; • Gain practical insights they can implement in future lectures and courses; • Explore how to make best use of technology in lectures; • Understand a realist, as opposed to a traditional effectiveness, approach to systematic literature review.
Structure: Learning will be interactive. Experienced education practitioners/researchers with expertise in educational technology and systematic review will facilitate

discussion. The workshop will include: • Group work to explore present understandings and assumptions; • Plenary input reporting review methodology and findings; • Group work to identify implications for practice and research; • Evaluation and commitment to future action.
Who should attend: Anyone who has to lecture or plan lecture courses.
Level of workshop: Intermediate.

7O Workshop: Psychometrics for Dummies: everything you wanted to know about analyzing exam data but were afraid to ask: Intermediate Workshop

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Background: Basic psychometric methods are examples of the use of Classical Test Theory which assumes an individual's observed score is composed of their 'true' score plus error. A more advanced approach seeks to identify the sources of error. Other methods are available to identify the interaction between student ability and question properties.
Intended outcomes: • To describe and explain Generalisability Theory, Item Response Theory and Rasch Modelling. • To interpret and evaluate the results of these analyses to improve test quality.
Structure: A presentation outlining the techniques of Generalisability Theory, Item Response Theory and Rasch Modelling. Activities will include interpreting and evaluating the results of knowledge assessments and OSCEs analysed by means of these techniques. (This Workshop is associated with AMEE Guide No 66 which provides a step by step description of some of these methods of analysis using SPSS).
Who should attend: Individuals who have attended the Introductory workshop or who have more advanced knowledge of psychometrics.
Level of workshop: Intermediate.

7P Workshop: Enhancing intrinsic motivation in medical students: Using Self-determination theory

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Background: Motivation is considered important by virtually everyone in medical education. Students like motivating teachers and teachers like motivated students. But when it comes to measures to estimate, assess or enhance motivation, many would welcome tools to work with. Self-Determination Theory (SDT) can provide help.
Intended outcomes: Participants are able to discuss: 1. the concept of motivation and the general framework of SDT 2. factors that influence motivation and factors that are influenced by motivation 3. the impact of motivation on student learning, academic success and its role in selection procedures.
Structure: 1. Introduction of organizers, workshop and participants (10 min) 2. Introduction to SDT and SDT continuum (10 min) 3. Activity 1 (30 min) Intended outcome: 1 Procedure: Give 5 different motivation scenarios in medical students to the participant groups and ask them to arrange them in an extrinsic-intrinsic continuum (20 min) Discussion of assigning examples to SDT continuum (10 min) 4. Introduction of three basic psychological needs (5 min) 5. Activity 2 (25 min) Intended outcome: 2 Procedure: Ask participant buzz groups to generate one factor each that can influence motivation and that can be influenced by motivation (10 min) Discussion: Factors that affect motivation and factors that motivation influences Interactive discussion (15 min) 6. Summary and Reflection (5 min).
Who should attend: Teachers, teaching coordinators, curriculum developers, medical students.
Level of workshop: Intermediate.

7Q AMEE-Essential Skills in Computer-Enhanced Learning (ESCEL) Course (closed session)

7R Workshop: Developing medical students' teaching skills

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Background: Since 2007, Barts and the London, University of London in the UK have run a compulsory programme in teaching for all final year medical students to meet GMC requirements. The Doctors as Teachers and Educators Programme (DATE) involves students in learning how to maximise teaching in classrooms and clinics, practising

teaching, receiving feedback and exploring their future roles and duties as clinical teachers. The focus is upon effective practice drawing upon educational theory.

Intended outcomes: Participants will be able to identify appropriate content for a course on teaching at an undergraduate level and gain ideas for developing or introducing a programme in their own institution.

Structure: An initial presentation of the DATE programme (structure and content), outcomes of evaluation followed by opportunities for participants to try out the activities we use such as: planning for learning, effective questioning, micro-teaching. It is anticipated that there will be exchange of ideas between participants regarding any similar provision in their own institution.

Who should attend: All faculty concerned with undergraduate curriculum development with an interest in developing the next generation of medical educators.

Level of workshop: Beginner.

7S Workshop: Dealing with transitions from medical school entry to retirement

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Background: The multiple transitions in a medical career, from medical school entry through clerkship, residency, practice, and finally into retirement represent significant changes in which individuals will experience a personal awareness of discontinuity, forcing the development of new behavioral responses to facilitate the changes. How individuals negotiate these transitions may have a profound impact on professional practice and personal life.

Intended outcomes: By the end of the workshop, participants should be able to: •Compare and contrast the challenges in the various transitions in a medical career, from medical school entry to the final transition into retirement; •Identify how they personally can support students, residents and physician colleagues who are experiencing these transitions; •Suggest approaches that their institutions might take to facilitate less stressful transitions.

Structure: A brief overview of the literature on physician transitions will be provided. This will be followed by small group work drawing on cases in which participants identify effective approaches and programs. Following a report back to the whole group, participants will generate practical recommendations that can be taken back to their own organization for further discussion and development.

Who should attend: Educators with an interest in supporting learners through transitions.

Level of workshop: Intermediate.

7T Workshop: Using Mind-Body Medicine Skills to Reduce Stress and Promote Wellness in Medical School

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Background: Reports from various sources suggest that burnout is prevalent in the medical profession, affecting upwards of one in three primary care practitioners. This trend may begin earlier with the observed decline in empathy during medical student training. To address this issue, faculty at Georgetown University School of Medicine have developed an 11 week experiential and didactic module that introduces medical students and faculty to a variety of mind body techniques (e.g., mindfulness meditation, autogenics and biofeedback, guided imageries, movement, and writing exercises) with the goal of enhancing professionalism by improving stress management skills and promoting wellness. The course integrates scientific principles with experiential learning. Each group of 10 students is facilitated by two trained faculty members from across the medical center (educators, researchers and clinicians). Outcomes include increased student empathy and mindfulness, as well as a reduction in students' perceived stress in medical school. In addition to involving over one-third of the students, the program has expanded to include specific offerings for faculty and staff.

Objectives: To discuss various approaches to teaching Mind-Body Medicine, including a detailed description of the 11 week course at Georgetown University School of Medicine, and appropriate outcome measures and assessment.
To participate in an "experiential learning" exercise to teach a Mind-Body Medicine Skill.

Format and Content: This workshop will be a combination of a short (30 minute) didactic presentation with extended group discussion, and a 60 minute experiential learning exercise.

Intended Audience: Individuals with responsibility for faculty development, student wellness and professionalism.

Outcomes/take home message: Experiential learning modules in mind-body medicine can be used effectively to foster student self-awareness, self-care, improve listening skills and empathy of students, and also advance educational goals in basic science, wellness and professionalism.

7U Workshop (Atelier en français): Évaluation des compétences cliniques: évaluer la validité des résultats

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L'évaluation des compétences cliniques doit être effectuée par tout pédagogue médical et précepteur clinique. Mieux

comprendre les principes d'évaluation de l'apprenant est donc un prérequis à l'interprétation de résultats aux examens. Toutes interprétations des résultats peuvent-être effectuées en utilisant un cadre conceptuel de la validité, peu importe l'outil utilisé pour évaluer les compétences cliniques, ex., questions à choix-multiples ou les examens cliniques objectifs structurés. L'acquisition et l'utilisation de données empiriques pour valider les résultats d'une évaluation permettent aux responsables d'examens de prendre des décisions qui sont fondées sur des principes bien établis. Les participants à cet atelier seront en mesure d'appliquer les principes de validité à l'interprétation de résultats d'évaluation conçue dans leur propre milieu de travail. L'atelier sera divisé en 3 parties, soit : (1) Bref historique des principes de validité; (2) Exposé des théories modernes; (3) Application des principes à l'aide d'exemples pratiques. Cet atelier est destiné à tout pédagogue médical ou précepteur clinique responsable de l'évaluation de compétences cliniques, soit au plan sommatif ou formatif.

7V Meeting: AMEE Postgraduate Committee (closed session)

7W Posters: The Student as Teacher

7W/1
Clinical Teacher: a peer-led teaching course to foster teaching skills in undergraduates and junior doctors

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J Shin (*University of Manchester, School of Medicine, Manchester, United Kingdom*)
JA Giles *(University of Manchester, Faculty of Life Sciences, Manchester, United Kingdom)*
S Vaughan *(University of Manchester, School of Medicine, Manchester, United Kingdom)*
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Background: The UK General Medical Council states in Tomorrow's Doctors that medical graduates must function effectively as a mentor and teacher. However, teaching skills do not routinely form part of the formal curriculum in medical schools. Here we describe a one-day event for UK medical students and Foundation Programme doctors.
Summary of work: The event taught participants how to plan and deliver a small group teaching session. The morning comprised of seminars and an opportunity for groups to design a teaching session on a clinical examination skill. In the afternoon participants delivered their teaching sessions to each other. Each participant received individualised feedback on their performance.

Summary of results: Data were collected from participants at five events. Few participants had previous teaching experience or formal training in how to educate others. Quantitative data revealed enjoyment and utility of the event. Qualitative data suggested the event provided a valuable opportunity to learn and practise teaching in a supportive environment, with planning and delivering the teaching sessions the most popular aspect. The individualised feedback was prized by participants.
Conclusions: A peer-led intervention fostering teaching skills in students and junior doctors proves highly valued and beneficial.
Take-home messages: Peer-led learning may be a useful adjunct in training medical students as mentors and teachers.

7W/2
A study to explore the effect of peer-assisted learning in clinical procedural skills - a pilot initiative

Dawn Lau (*Cardiff University, Institute of Medical Education, Cardiff, United Kingdom*)

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Background: Educational literature shows a great diversity of Peer-assisted learning (PAL) programmes within medical education. Cardiff Medical School did not have a formal programme for PAL within the core curriculum. Aims: 1. Determine the effects of the programme for peer tutors and tutees; 2. Determine its feasibility in the local context
Summary of work: Selected senior year students were trained as PAL tutors and then participated in second/third year clinical procedural skills sessions (Sep – Dec 2011) to support faculty tutors. PAL tutors, learners and faculty tutors were asked to evaluate the PAL experience using questionnaires with both Likert scales and free-text.
Summary of results: PAL tutors (N=23) rated mean of 4.43/5 for agreement they gained new competencies and teaching techniques; mean of 5/5 that they would choose to be a PAL tutor again. Learners (N=209) rated mean of 4.74/5 for PAL tutors performing well in their teacher roles; mean 4.78/5 for their belief that PAL tutors can serve as effective teachers. Faculty tutors (N=12) rated mean of 4.6/5 that PAL tutors performed well in their roles; mean of 4.41/5 their belief that PAL tutors can make effective teachers.
Conclusions: The results suggest that both PAL tutors and tutees benefit from the teaching interaction, and PAL has been shown to be acceptable, popular and feasible in our local context. Plan to expand programme in 2012/13.
Take-home messages: PAL with appropriate training can work within the core-curriculum with perceived benefits to PAL tutors, learners and faculty tutors.

7W/3
Experience of peer assisted learning in improving paediatric resuscitation skills for Oxford University medical students

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Rowan Wathes (*Oxford University, Medical Sciences Division, Oxford, United Kingdom*)
Gabrielle Norrish (*Oxford University, Medical Sciences Division, Oxford, United Kingdom*)
Charlotte Parker (*Oxford University, Medical Sciences Division, Oxford, United Kingdom*)
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Background: Confidence in managing resuscitation is an essential component of being a junior doctor. Despite this, there is limited exposure and time to develop these skills during clinical attachments. This is particularly true for paediatric emergencies. To help students gain more from their limited time, we developed peer assisted learning (PAL) for paediatric basic life support (BLS) teaching.
Summary of work: We designed and delivered paediatric BLS teaching sessions which incorporated demonstrations, role play, and mini OSCE scenarios. The scenarios covered included collapse, drowning, and choking.
Summary of results: 124 students were taught over a one year period. 100% found the sessions useful, commenting that it had improved their skills and confidence. Students particularly enjoyed practicing in a non-threatening environment and receiving individual feedback. They preferred smaller group sizes and written handouts allowing consolidation. Qualitative feedback was used to improve subsequent sessions.
Conclusions: PAL is a valuable tool for medical education which is currently under-used. Students responded positively to being taught by peers who had recently faced similar challenges. This is particularly true for learning practical skills where real life situations are infrequent. PAL can easily be implemented and supplement more traditional methods of medical training.

7W/4
Peer-Assisted Learning: how does the peer relationship foster learning?

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Background: Peer-assisted learning (PAL) may be defined as teaching between status equals. Past research has identified unique benefits of PAL interactions for students. Illeris's model of three dimensions of learning may be combined with existing reports of congruence between peer-tutors and students proposed by past PAL studies, to provide a theoretical framework for examining the PAL interaction.
Summary of work: The study employs semi-structured focus groups and one-to-one interviews with twelve peer-tutors in the Manchester PAL scheme. Video recordings of PAL sessions were used to stimulate reflection, helping to ground participants' discussion in the events that occurred during the actual PAL session. Template analysis was used for thematic analysis of data, with a priori themes drawn from existing models of teaching and learning.
Summary of results: Peer-tutors described mutual identification with students. Such identification had important influences on the models of teaching and learning employed by peer-tutors, and was based in the shared experiences of medical school. Peer-tutors sought to build trust and remove anxiety from the learning environment.
Conclusions: Shared experiences and mutual identification between peer-tutors and students define many aspects of the PAL interaction and learning experience.
Take-home messages: Mutual identification between students and peer-tutors fosters learning in the context of PAL.

7W/5
Impact of Peer Facilitated Study Groups in Anatomy: An Innovative Model

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Background: In September 2011, a pilot project, the Meds Facilitated Study Group (MFSG), was instituted at a large urban university to assist first year medical students with the challenges of anatomy. This pilot project was based on the Supplemental Instruction (SI)model and featured peer facilitated small group sessions. This was the first time SI was implemented in a medical school environment. This study assesses the impact of this pilot.
Summary of work: A pre/post survey was conducted of the entire first year class to gather information regarding attitudes, knowledge and behaviours related to the influence/importance of the MFSGs. These surveys were analysed using descriptive statistics and common theme analysis.
Summary of results: Results revealed that the majority of students found the MFSGs to be beneficial; in particular, they identified the benefits of small group learning, the opportunity to review complex material and the ability to study with second year students. Barriers to attendance included scheduling conflicts and, oversubscription.
Conclusions: First year students at our institution found the MFSGs to be beneficial to meet the challenges associated with the anatomy course. This model can be adapted to medical education programs and enhances the students

learning experience but requires adequate time and resources.

Take-home messages: First year students at our institution found the MFSGs to be beneficial to meet the challenges associated with the anatomy course. This model can be adapted to medical education programs and enhances the students learning experience but requires adequate time and resources.

7W/6
Practicing and preaching procedural skills: peer-guided learning

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Background: During procedural skills training session third year medical students practice in small groups and a lecturer oversees the attainment of their proficiency. Thereafter they can practice during voluntarily sessions without supervision.

Summary of work: Seven third year student were appointed during 2011 to provide guidance during voluntary practice. They underwent further skills training, their knowledge base was increased and they were taught the basic principles of facilitating active learning. After the OSCE, students were requested to complete a questionnaire that evaluated the tutors and also the tutor-guided learning sessions.

Summary of results: A response rate of 92% was observed. Students found the tutor sessions worthwhile because the tutors were thoroughly prepared and organised, and because they made the students feel comfortable, and they tried to understand the nature of the students' needs/problems. They felt the tutors' teaching approach stimulated them to think and work independently.

Skills improvement with tutor sessions was mainly attributed to the tutors trying to understand the nature of their needs/problems and allowing time for questions and discussions.

Conclusions: Peer-guided learning appears to be acceptable to students and it provides opportunities for interaction, feedback and remediation.

Take-home messages: Peer-guided skills learning could be extended to establish mentorship as a model for learning support and academic leadership.

7W/7
Body to Body: a continued study of peer-led medical education

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Background: The concept of the 'doctor as teacher' is not a new one; peer instruction in anatomy has long been viewed as fundamental in undergraduate education and its use is well established within contemporary medical curricula. Our sustained interest in exploring the benefits of peer-led education continues to support the view that peer-to-peer teaching has a valued and important role in medical education.

Summary of work: Qualitative feedback was collected from two cohorts of students in the dissecting room using a combination of scored questionnaires and free-text comments. This year's results continue to support the findings of our previous, smaller study and add weight to the importance of the peer-tutor.

Summary of results: Students reported a greater engagement with the subject when in peer-taught groups. There was a strong positive association between student-facilitated learning and a deeper understanding of the subject when tested using anatomy workbooks.

Conclusions: Our ongoing study continues to simply peer-led demonstrations facilitate deeper learning in anatomy and may promote greater engagement with important subject matter.

Take-home messages: Students and peer-educators reported increased understanding; suggesting there is a role for formalised peer-led education in anatomy teaching.

7W/8
Clinical skills in the preclinical studies: Experiences of a peer assisted learning in a clinical skills refresher course

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Background: Peer assisted learning (PAL) is an emerging concept in student-centered learning. We implemented PAL in a clinical skills refresher course for medical students before their clinical attachment.

Summary of work: A peer tutor group of six clinical students trained 56 preclinical students in a six-station optional clinical skills course. Topics included: reanimation, ECG registration, cardiac auscultation, blood pressure measurement, knee joint assessment and examination of tendon reflexes. After the course all participants filled a questionnaire. Each of the peer tutors were trained and assessed by a clinical teacher.

Summary of results: Feed-back of the preclinical students was exceptionally positive. Many reported having learned the

theory and execution of clinical skills "better than never before". Students rated the importance and quality of the course high (mean 3.82/4 and 3.77/4, respectively) - even higher than that provided by the faculty. Furthermore, most preclinical students were interested in becoming peer tutors themselves. Peer tutors reported having learned both medical and pedagogical skills.

Conclusions: PAL is a motivating and effective method in training clinical skills. Many students are motivated to act as peer tutors and tutoring improved their medical and pedagogical competences.

Take-home messages: PAL of clinical skills, especially when guided by trained tutors provides a motivating learning experience for all participants.

7W/9
Watching you teaching them: Developing Medical Students as Clinical Teachers through Observation and Feedback

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Background: Our Trust has further developed our taster days for school students as an opportunity for our medical students to develop as educators/clinical teachers and leaders.

Summary of work: 6th form students were assigned Year 3 medical student mentors who were with them for the whole day. Mentors received teaching on clinical skills models and were then able to demonstrate these to the school students. They also taught/facilitated group sessions on UKCAT/BMAT papers, interview skills and UCAS personal statements. In a mock OSCE session, year 5 medical students rotated around stations staffed by Foundation doctors while Year 3 mentors and their mentees observed. Throughout the day, observation notes were made by Medical Education staff and all medical student educators received feedback on their teaching/facilitation and Student Educator Certificates.

Summary of results: Medical students said that: 1 they felt that their own clinical skills improved. 2 the feedback they received made them feel more confident in their teaching. 3 they felt more positive/enthusiastic about teaching in the future. 4 they had gained a great deal from the day

Conclusions: Early opportunities for medical students to develop as educators build teaching, leadership and clinical skills.

7W/10
Evaluation of a students-as-teachers program in a Community Health Screening skills program

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Background: The medical students association from the University of Beira Interior proposed the development of a Community Health Screening skills program in the Clinical Skills Lab Program. To achieve that, a students-as-teacher program was also developed.

Summary of work: 5th grade medical-students, were selected to undergo a series of formations, in order to prepare them to teach 2nd year students, skills that comprise the Community Health Screening skills program. To evaluate it, a questioner on their opinion was used. Several indicators were evaluated using a Likert scale; a commentary section was also present.

Summary of results: The overall mean score was 4,8. The students felt the gap between doctor-student diminished, and felt more at ease to ask questions and to practice those skills.

Conclusions: The program was considered a success from the point of view of the Faculty. The students that were teaching felt motivated, and the ones that were learning felt more integrated and above all, they said that the quality of the contents was maintained. It will be propose to be repeated and expanded to even more skills.

Take-home messages: Although it was a successful project, more accurate methods in monitoring its performance should be used, to better understand its flaws and then work on its improvement.

7W/11
What value has near-peer teaching? A comparison of students' and clinicians' views

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Background: Junior clinicians have up-to-date experience of student exams and working life, and so are well placed to provide near-peer teaching. But is there a discrepancy between what students and clinicians believe is beneficial for learning? And does teaching at this level promote doctors as educators?

Summary of work: 57 students were involved in a near-peer teaching programme at The Princess Alexandra Hospital in 2010/11. Doctors and students assessed the usefulness of

this teaching using a Likert Scale. The doctors also assessed whether this experience encouraged them to teach further.

Summary of results: 98.2% of students and 91.7% of clinicians believed OSCE's to be the best modality to prepare for employment.

67% of doctors reported an interest in teaching before qualifying. Following the programme this rose to 87%. Additionally, 40% pursued formal teaching qualifications.

Conclusions: Interestingly, students believed OSCEs to be the best approach for preparing for employment, unlike junior clinicians. Future research could assess if this is due to the quality of the teaching given, or a fundamental change in the perception of learning needs as finalists make the transition from student to doctor.

Take-home messages: The two groups' perception of learning needs differ; this warrants further investigation. Early exposure to teaching promotes doctors as educators.

7W/12
Exploring the experience of peer-assisted learning at medical school: a phenomenological study

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Background: Peer-assisted learning (PAL) is increasingly used within medical school curricula. While there is some evidence about its effectiveness, less is known about how it promotes learning. We therefore chose an in-depth approach to explore how medical students experience the interactions in PAL, and how the concept of social congruence fits medical students' lived experiences of peer-facilitated learning.

Summary of work: In accordance with interpretive phenomenological methodology, individual interviews with three peer tutors and five learners were audio recorded, transcribed and analysed using template method. An account of the lived experiences of study participants was synthesised from personal accounts.

Summary of results: Respondents used powerful affective language to describe their learning experiences. Learning was promoted by the informal, interactive and safe climate of PAL sessions. Peer tutors' empathy with learners as individuals new to the clinical environment was an important support to their learning.

Conclusions: Peer-assisted learning provided medical students with a safe environment in which to learn clinical skills. PAL met students' need for an additional medium outside of normal clinical teaching in which to work out uncertainties and to develop confidence. Senior students helped junior students access parts of the hidden curriculum that helped them learn.

7W/13
Peer Assisted Learning is Effective for the Education of Undergraduate Medical Students in a Clinical Setting

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Background: Peer Assisted Learning (PAL) has been used for many years to teach scientific information to undergraduate students. This study aimed to determine whether PAL can be effective in a clinical environment.

Summary of work: 410 first-year medical students were taught clinical skills by volunteer tutors. Tutees completed a questionnaire focussing on 5 domains: tutor preparation/organisation; session content; peer teaching; tutee outcomes and programme analysis. A Likert scale was used to classify responses. Free text was obtained and analysed for recurring themes. University Research Ethics Committee approval was obtained.

Summary of results: 94% of tutees reported an improvement in confidence and ability in performing clinical skills. 94% found PAL of equal value as formal teaching and 98% felt the teaching was aimed at the right level. 96% of tutees received useful feedback. Free text comments confirmed that tutees perceived sessions to be well structured and of high quality.

Conclusions: This is the first study to report that PAL is a beneficial and effective method of teaching medical students in a clinical setting.

Take-home messages: This study identified PAL in a clinical setting as being a useful method of improving the confidence and perceived ability of medical students in performing clinical skills.

7W/14
Peer Tutors' Challenges at Charité Clinical Skills Lab – A Qualitative Survey of Pedagogical Needs

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Background: Since the peer tutoring program was established in 1999, it had become a supplemental learning opportunity for all medical students at Charité's clinical skills lab. With a rising number of tutorials - approx. 1000 per year - a systematic training of peer tutors becomes necessary. For the development of a pedagogical training as needed, it is one requirement to determine challenges and needs of peer tutors including tutees' perspectives. Aim of this qualitative study was to survey the challenges peer tutors face during clinical skills tutoring activities.

Summary of work: To investigate peer tutors' challenges in tutoring clinical skills, peer tutors and tutees were asked using semi-structured interviews including narrative parts. To examine different challenges, a heterogeneous sample was considered. Inductive categories were formed using the told experiences. A focus group session completed the examination to validate the findings.

Summary of results: The validated categories constitute the basis which should be noted for the development and implementation of a specific pedagogical training for peer tutors.

Conclusions: This survey assesses different pedagogical needs of peer tutors at Charité's clinical skills lab. The results shape the curriculum to educate peer tutors.

Take-home messages: Future studies should examine how far the identified categories can be observed in tutorials.

7W/15
Tutor Competency: A Determinant of PAL Effectiveness

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Background: Peer-assisted learning (PAL) is an effective tool in medical schools; however, there is no evidence about the determinants of its effectiveness. This study aims to explore the relationship between PAL tutor competency and tutee history taking learning outcomes from medical student tutees' perspectives.

Summary of work: 240 first year medical students were divided into small groups and allocated a third, fourth or fifth year student volunteer tutor who taught history and vital sign taking skills. Three categories assessed tutor competency: organization, knowledge, and communication skills. Similarly, tutee history taking learning outcomes were assessed by improved autonomy, organization and communication skills. Responses were recorded on a 4-point Likert scale and analysed with PASW software.

Summary of results: Tutor organization significantly predicted the following perceived learning outcomes: Improved history taking autonomy ($r=0.28, p<0.001$), Improved knowledge of history taking structure

($r=0.36, p<0.001$), Improved communication skills ($r=0.34, p<0.001$). Tutor knowledge predicted the same outcomes: Improved history taking autonomy ($r=0.31, p<0.001$), knowledge ($r=0.25, p<0.001$) and communication skills ($r=0.20, p<0.001$). Tutor communication predicted improved history taking knowledge ($r=0.35, p<0.001$).

Conclusions: Tutees' perception of organized, knowledgeable and communicable tutors positively correlated with their self-perception of improved autonomy, knowledge and communication for history taking.

Take-home messages: Tutor competency likely contributes PAL's effectiveness. Exploration of other determinants for the positive PAL experience is welcome.

7W/16
Peer Assisted Learning is beneficial for first year medical students in improving their history-taking skills

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Background: Peer Assisted Learning (PAL) is a validated educational tool, often used to supplement formal teaching. This study evaluated the effectiveness of PAL for first-year medical students in clinical settings, particularly in regard to developing history-taking skills.

Summary of work: 240 first-year students were paired with a peer-tutor, a student volunteer in their clinical years, on a 1:1/2:1 basis. Tutors delivered teaching on history-taking and vital signs, and supervised the tutees in practice. An interactive session using electronic keypads was conducted to evaluate the peer-led sessions. 4-point Likert scales were used to quantify responses. University Research Ethics Committee approval was obtained.

Summary of results: 85.3% of tutees considered PAL to be a useful supplement to formal teaching. 88.6% believed the scheme highlighted deficiencies in their history-taking skills. The PAL scheme enabled 85.6% to improve their confidence with history-taking. 67.0% were more confident in suggesting differential diagnoses, 88.1% had improved understanding of pathophysiology of common conditions, 83.7% improved their appreciation of psychosocial impacts, and 84.3% had a better understanding of managing common conditions.

Conclusions: This study demonstrates that PAL schemes help first-year students developing an appreciation of the history-taking process, as well as improving their confidence.

Take-home messages: PAL is beneficial for first-year medical students in improving their history-taking skills.

TUESDAY 28 AUGUST 2012

7W/17
Peer-Assisted Feedback (PAF) in Case-Based Tutorials

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Background: The relevance of timely and specific formative assessment to the achievement of learning outcomes is much discussed in medical education.[1,2] Formative assessment in the curriculum merits attention, particularly in the setting of group tutorial sessions, as these provide the best opportunity for this method of evaluation.
Summary of work: An exploratory survey investigated 10 undergraduate medical students' experiences with formative assessment in tutorials. Collectively, these students had over 400 hours of tutorial experience. Subsequently, a pilot investigation of a novel in-tutorial formative assessment tool called Tutor-Facilitated, Peer-Assisted Feedback (PAF) was undertaken. While existing assessment methods employ mid- and end-unit feedback by tutors alone, PAF proposes weekly self-assessment as well as peer and tutor feedback.
Summary of results: In the first study, most students reported that feedback was infrequent, non-specific and lacked developmental direction. In the second investigation, PAF proved feasible and efficacious as a formative assessment method, informing tutors' summative assessments.
Conclusions: Current practices of formative assessment may be limited and untimely, problems that PAF may be able to resolve.
Take-home messages: Students welcome feedback and there are opportunities for faculty to facilitate this with and amongst students. A study is planned to investigate students' needs, and the acceptability and effectiveness of a pedagogical intervention (PAF) to address them.
[1]Arnold et al., 2007; [2]Schuwirth & van der Vleuten, 2003

7W/18
Trauma and Emergencies in Pregnancy (TrEP): how a peer-led course can improve medical student knowledge and confidence

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Kim Hammond (*Leicester Royal Infirmary, Clinical Skills, Leicester, United Kingdom*)
Eleanor Ford (*University of Leicester Medical School, Undergraduate Medicine, Leicester, United Kingdom*)
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Background: The Trauma and Acute Care Society at the University of Leicester has developed a one day peer-led course to teach, assess and reinforce the core knowledge, skills and attitudes needed for the management of trauma and emergencies in pregnancy (TrEP).
Summary of work: Using a quiz, student pre- and post-day knowledge of the key topic areas taught was assessed. In addition, students were asked to report their perceived confidence and comment on their overall enjoyment of the day. Data collection and resultant analysis were based on Kirkpatrick's 'hierarchy of level of evaluation'.
Summary of results: 100% of students who attended the course said they would recommend it to others. The pre- and post-day quiz demonstrated knowledge had significantly increased across all key topic areas, with a corresponding increase in reported self-confidence ($p<0.0001$).
Conclusions: The findings suggest that the course evaluated well, providing a safe environment to learn and practice core skills needed in daily clinical practice (2). There was a significant increase in the confidence, knowledge, skills and attitudes needed to manage trauma and emergencies in pregnancy – highlighting the potential to optimise the medical student role in patient management.
Take-home messages: TrEP would be a valuable addition to the undergraduate curriculum.

7X Posters: Professionalism

7X/1
Does Professionalism after Graduation Correlate with Clinical Year Learning Achievement?

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Background: The Thai Medical Council (TMC) sets the standard and expects physicians to act professionally. The learning outcome curriculum in medical school is supposed that graduates will satisfy TMC. Did the students that achieve being the good practitioner? Does the professionalism of graduated doctors correlate with their clinical year performance?
Summary of work: Forty-two doctors were assessed for professionalism after finishing one-year rotating internship.

All were graduated as medical doctors from Chulalongkorn University doing their last three clinical years at Chonburi Hospital Campus during the academic years of 2007 to 2009. The assessment was done in five domains; professional behaviors (moral and ethics), clinical decision skill, procedural skill, communication skill, and professional development. The cumulative clinical year (fourth to sixth) grade scoring of each one was paired with each category of professionalism using Pearson's r correlation coefficient.

Summary of results: The Pearson's r coefficients were .568 for cumulative grade and professional behaviors, .460 for cumulative grade and clinical decision skill, .430 for cumulative grade and procedural skill, .447 for cumulative grade and communication skill, and .463 for cumulative grade and professional development. All had statistical significance with p < .01.

Conclusions: The professionalism of medical graduates correlates well with their achievement in clinical years.

Take-home messages: In learning outcome curriculum, educator should find factors to predict professionalism of the graduates.

7X/2
History Repeats Itself. It Has To. No-One Listens

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Background: Throughout history doctors have strived to remain pillars of the community. Examples from the past can emphasis elements of professionalism and ethics. We consider how analysing these can impact on students' understanding and application of professionalism and associated skills.

Summary of work: In the nine-week course for third-year students, teaching emphasis was on connecting the past and present on issues of professionalism. Various teaching methods were used; themed tutorials covered surgery, women's health, psychiatry and British Empire medicine. Psychiatry teaching was in a Victorian asylum and used film material from the 20th century. Students prepared weekly presentations as part of teaching.

Summary of results: Written evaluation was collected on whether students found the course professionally or personally relevant, reflections on what was learnt and comments on whether opinions on professionalism had changed. Thematic analysis of these free-text questions identified consistent themes:
1. A fresh context to the medical profession

2. Improved appreciation of ethical principles
3. Improved public speaking

Conclusions: We found History of Medicine to be a stimulating and valuable resource for illustrating professionalism and related skills. The course may benefit from the expansion of student-tasks that contrast past with current practice.

Take-home messages: History of Medicine should be considered as a means of exploring and understanding of professionalism.

7X/3
Introduction of Professionalism in a Medical Curriculum. A Pilot Experience at the Medical School of the University of Barcelona

Jordi Pales (*University of Barcelona, Fundación Educación Médica, Medical School, Barcelona, Spain*)

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Background: Professionalism is an emergent topic in medical education. An elective course on professionalism has been introduced in our Medical School as a pilot experience, in the context of the new curriculum.

Summary of work: The course is addressed to 30 first year students and it is developed along 75 hours during a semester. The main learning outcomes expected are to know the concept of professionalism and its attributes and to be able to recognize and evaluate the attributes of medical professionalism involved in practical cases. Learning activities consist in few lectures where the principles and the concept of medical professionalism are developed, seminars where some physicians from different levels and specialities expose their vision of professionalism and small group sessions where different cases are discussed and analyzed by students. Independent learning activities are critical reading and discussion of articles on the topic and the analysis of practical cases. The students are assessed continuously along the time on the basis of attendance and participation and at the end of the course when the students are asked to analyse different practical and real situations.

Summary of results: The course has been developed during 3 consecutive years. The surveys carried out show a high satisfaction of teachers and students. The course should be compulsory in the new curriculum.

Conclusions: This experience has been well accepted by students and teachers and supports the introduction of professionalism, from early stages of medical education.

Take-home messages: Teaching and learning professionalism must be incorporated into medical curricula.

7X/4
Mapping and Mentoring: a longitudinal approach for developing professionalism among medical students attending Clinical Skills Course - experiences from the United Arab Emirates University

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Background: Professionalism has been defined as "constituting those attitudes and behaviors that serve to maintain patient interest above physician self-interest". Early and consistent exposure to rules of professionalism can aid good professional practice.
Summary of work: To describe the structure and process of mapping and monitoring student professionalism and present preliminary findings. A system to map student professionalism in the clinical skills course has been developed and implemented. Professionalism constructs were: punctuality, preparedness to learn, professionally groomed & respectful communication. Longitudinal mapping and mentoring is being conducted across a two years clinical skills course.
Summary of results: The work is in progress. For the academic year 2011 -2012, of the 64 year 3 and 55 year 4 students, professionalism scores were generated for 94% and 91% of all tutor-student encounters. Constructs of concerns were unpreparedness, poor punctuality & grooming, use of mobile phone in class. Concerned students valued meeting and discussing the feedback with a mentor.
Conclusions: This preliminary analysis indicates that highlighting professionalism constructs and mapping students on a weekly basis is achievable and valuable to the course administrators and students who were contacted and met with. Studying the long term impact of such a monitoring system on students' professionalism is warranted.
Take-home messages: Highlighting professionalism constructs and mapping students on a weekly basis is achievable and valuable to the course administrators and students.

7X/5
Developing a Taxonomy of Professionalism

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Aidan Byrne (*Cardiff University, School of Medicine, Cardiff, United Kingdom*)
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Background: The study of professionalism remains topical as medical schools are increasingly required to demonstrate the professional behaviour of their students. However schools remain dependent on the development of validated tools in order to provide a meaningful response. This UK, mixed

methods study developed a survey instrument as a predictive tool to assess the behaviour of medical students.
Summary of work: Interview data were analysed following the principles of grounded theory. Three themes emerged: 'Attitude', 'Role' and 'Personal Development'. Findings informed the development of a Multi Source Feedback (MSF) instrument to assess medical students' professional behaviours.
Summary of results: Initial results from the survey found that 21% of students in year 1 and 24% of students in year 2 were identified as unprofessional. Of these, 53% of those identified in year one, were also identified in year two. The findings from the survey suggest its usefulness as an assessment tool.
Conclusions: The study provided a descriptive view of medical professionalism, with outcomes similar to those resulting from a blueprinting exercise in 2009 (Wilkinson). Future plans include surveying further cohorts to test the predictive ability of the tool.
Take-home messages: The MSF survey provides an additional, validated assessment tool for measuring medical students' professionalism.

7X/6
Assessing the first year course Introduction to Medical Profession, using a short written essay. What students are likely to lack in their early learning about professionalism?

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Background: In 2010, a first year course (40 h) "Introduction to Medical Profession" (ItMP) was developed at the Milan International Medical School. It comprises lectures on pivotal concepts (disease/illness, doctor-patient relationship, professionalism etc.), medical humanities paths and early clinical contact, supported by reflective writing.
Summary of work: Students (N=38) wrote an essay for the ItMP final exam. The essay's evaluation criteria were: 1. clarity and logic articulation, 2. pertinence of quotations, 3. capacity of distinguishing personal opinions from those of experts 4. pertinence of personal reflections/experiences reported (from the humanities paths and the ward) 5. reflective attitude and 6. formal aspects. According to these criteria, a 15 items grid associated to a Likert scale (1-4) was created and applied by two teachers.
Summary of results: Students obtained the highest scores in 2, 3 and 6. Referring to 1, students showed ability in

discussing the course's topics (i.e. disease/illness), supporting their assertions with literature. Less ability was shown in supporting their thesis with classroom/ward experiences (4) and in adopting a reflective posture (5).

Conclusions: Students have comprehended the main course's concepts, but their essays often lacked the ability of integrating personal experiences/reflections with those concepts.

Take-home messages: Reflexivity is a core competence in professionalism and it must be trained and evaluated.

7X/7
The job satisfaction and professionalism of fourth year students of one medical school

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Background: This study is to evaluate students' job satisfaction and professionalism when finishing their graduate course.

Summary of work: Forty-four fourth year students who finished all curriculum evaluated their job satisfaction, self-esteem, self-confidence and professionalism by a questionnaire using a 7-point Likert scale.

Summary of results: Of 44 students, the number of male and female was 21(47.7%), 23(52.3%) respectively. The mean age was 31.34±2.19. The job satisfaction was relatively high in self-realization(5.55), low in social respect and trust(4.43), income(4.66), prospect(4.70). The self-esteem and self-confidence were positive (over 5 point). The students thought that professionalism was high in knowledge specialty(5.86), being worthwhile(5.84), community service(5.77), job ethics(5.39), but the score was low in future social position(3.41), sufficient reward(3.68) and social respect(3.98).

Conclusions: The job satisfaction, self-esteem and self-confidence of fourth year students finishing their graduate course was relatively positive except social respect and trust, income, prospect. Of professionalism, knowledge specialty, being worthwhile, community service and job ethics were high, but future social position, sufficient reward and social respect were low.

Take-home messages: The job satisfaction, self-esteem and self-confidence of medical students was relatively positive, but of professionalism, the score of but future social position, sufficient reward and social respect were low.

7X/8
Examining Ideals as Part of Teaching Professional Development

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Background: Professionalism is an essential aspect of medical practice, but it is difficult to incorporate into the medical curriculum.

Summary of work: We did a repeated activity with medical students, the first time when they were 2nd year medical students (preclinical year), and the second time in their final year. The activity comprised of writing about their hopes and dreams regarding the qualities and duties they saw as pertinent to becoming a good doctor. After repeating the activity, they were given a questionnaire in 2 parts, the first part asked if and to what extent their previous aspirations had changed. The second part explored whether or not looking back on their past ideals could help remotivate their conscience about being a good doctor.

Summary of results: There were 56 students participating in these activities. Most medical students ideas had changed compared with their preclinical year. Eighty five percent of medical students had more motivation after they looked back at their initial ideals. There were 3 ideals that changed the most; more wanted to work for the community; community gains were viewed as more important than personal gains; and lastly they would like to study more to improve their knowledge.

Conclusions: The result of this study can inspire medical teachers to do similar activities with their students.

Take-home messages: Even if we forget or are distracted from our early motivations, they can be recalled and reenergized using this relatively simple process.

7X/9
Development of professionalism learning tool in osteopathy

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Background: In March 2012, the UK General Osteopathic Council published student fitness to practise guidance for Osteopathic Educational Institutions. The guidance requires 'continual dialogue about professionalism which runs throughout osteopathic pre-registration education. Students should be supported to learn professional behaviours.' The guidance must now be implemented to explore its effectiveness.

Summary of work: Two electronic inventories currently being used in UK and international medical schools are being customised by a consensus group recruited from the 10 UK Osteopathic Educational Institutions. One inventory encompasses academic integrity and the other early clinical professionalism. Respondents to the inventories are asked to engage in the judgements around the appropriate sanctions and responses to observed lapses in professionalism in order to help them learn the standards expected of them in preparation for autonomous clinical practice.

Summary of results: Data collected at the end of the current academic year will be reported and preliminary results explored for using the approach to trace the learning curve of osteopathic pre-registrant professionalism and compared with published data from medical students and faculty. The validity and reliability of the tools will be analysed to assess their value for learning and self-assessment.

Take-home messages: Impact and implementation of regulatory guidance.

7X/10
The importance of professional ethics in medical students of Jahrom University of Medical Science, Iran

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Background: The aim of this study was evaluation of importance of professional ethics in medical students of Jahrom University of Medical Science.

Summary of work: This study was descriptive cross-sectional. 56 students from 127 of clinical students were selected randomly. A valid questionnaire included nine questions about the level of professional ethics for students.

Summary of results: 64.2% of students were interested in ethics. 50% believe in the effectiveness of the course on their behavior, 71.4% declared the importance of medical ethics. 28.5% considered being busy at work as a factor for forgetting medical ethics. The most important characteristics for practicing physicians are Medical knowledge for 42.8% and ethics for 21.4%. 21.4% considered both ethics and knowledge as essential factors for clinical practice. 84% were

not satisfied with the methodology of medical ethics teaching.

Conclusions: Professors are a very good model for practical implementation of ethical behavior. Case reports of patients in medical ethics can be a practical application.

Take-home messages: Student Orientation system might increase the attractiveness of the medical ethics course.

7X/11
Top 10 Films to Make our Students Think

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Background: Film use in medical education has been shown to provoke thoughts; used for topics including ethics and professionalism. Our aim was to compile a consensus list of the top-ten films to make our medical students think covering broad themes in medicine.

Summary of work: A Delphi method was used to gain a consensus view. 980 teaching staff from Cardiff University were emailed and asked to nominate films they thought would make our students think. 41 people nominated 131 films. Participants then ranked their top-ten by a second vote. With 129 responses the top 20 from this list was extracted; a final voting round then performed to ensure consistency.

Summary of results: 1. A Beautiful Mind; 2. My Left Foot; 3. One Flew over the Cuckoo's Nest; 4. Rain Man; 5. Trainspotting; 6. Elephant Man; 7. To Kill a Mockingbird; 8. Philadelphia; 9. The Kings Speech; 10. MASH.

Conclusions: Our list of the top-10 films highlights many elements of ethics and professionalism. We plan to pilot film-nights for students and facilitate discussion of themes generated. Reflective evaluation will examine behaviour changes.

Take-home messages: A consensus list of films that medical students should watch has been complied by local Educators. The impact of these on student behaviour will be evaluated.

7X/12
An Australian perspective: developing a defensible framework to meet the demands of entry level professional registration of undergraduate medical students

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Background: In 2009, Australia introduced the Health Practitioner Regulation National Law Act, moving regulation from a state base to a national platform. The law

encompassed initially some 12 health professions, and for the first time, undergraduates in those professions were registered from day one of course entry. The law identified key areas where students were deemed as legally and professionally accountable as their graduated colleagues.

Summary of work: Processes, tools and resources developed to accommodate the law will be presented. Emphasis was placed on aligning the notification, investigation, reporting and actionable responses of the university and the national regulator when dealing with adverse professional undergraduate behaviour.

Summary of results: Challenges encountered included defining adverse professional behaviours in the early undergraduate or proto professional; educating faculty and students about the New Law and the implications for practice; identifying and effecting a curriculum that valued and assessed professional outcomes ;and securing effective resourcing for this new activity.

Take-home messages: The National Law, predicated on patient safety and quality care, is an enabling vehicle to drive faculty to address adverse professional undergraduate behaviours in the vocational health disciplines. "Look back" evaluation of graduates reported to disciplinary boards will necessarily involve a review of their University training, with emphasis on just how responsibly their undergraduate experience was informed, tracked remediated or disciplined.

7X/13
Is there a relationship between the years of study and professionalism scores?

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Background: Gaining proper skills and competencies of professionalism is generally accepted as an outcome of whole undergraduate curriculum. If that is the case, we hypothesized that students in higher stages of their studies should have higher scores in professionalism. However, when a self-assessment questionnaire was applied last year 5th year students showed lower scores than 4th years.

Summary of work: That self-assessment tool also evaluated 'own limits recognising' abilities of students. 5th year students had higher scores. This was a limitation of last year's survey. In order to validate last year's findings, we had to re-check their own limits recognising scores. The comparison between 4th and 5th year students was made by using a case-based tool. Sample sizes of both groups were equal.

Summary of results: There was no meaningful difference between 'recognising own limits' scores of 4th and 5th year students. (p<0,05).

Conclusions: 4th and 5th year medical students seem to be similar while recognising their limits. Our findings from last year which say that 5th year medical students are not more professional than 4th years stay unrefuted.

Take-home messages: Spending time in medical schools and hospitals may not be enough to develop Professional attributes. Program developers should focus on different methods to help students in gaining relevant competencies.

7X/14
Students' perceptions on Plagiarism

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Background: Academic writing and presentations have become essential parts of medical education. The adoption of someone else's words or idea in one's own work without referencing is defined as "plagiarism". Through the effective internet search engine era, information is more easily accessed and plagiarism therefore can ensue both intentionally and unintentionally.

Summary of work: Quantitative questionnaire-based cross-sectional survey was conducted in clinical year medical students in Prae, Tak and Pichit Medical Education Centers, Naresuan University to explore existing practices, knowledge and attitudes regarding plagiarism.

Summary of results: Of 94 medical students, 95% had used information from the others in their writing. However, 54% sited the sources every time while 44% and 2% sometimes and never referred to the original information. Sixty-eight percent of students had conducted "copying and pasting". Although 44% thought forgetting referencing is "wrong", 56% regarding this as "shouldn't". Majority of the students (77%) had no idea on what "plagiarism" is, which could partly be due to the limitation of terminology knowledge.

Conclusions: Most students still reported actions indicated plagiarism even though all of them viewed these as professional misconduct and should not be practiced. Knowledge on plagiarism was found to be limited among medical students.

Take-home messages: Plagiarism should be taught to medical students.

7Y Posters: GP Education, Mentoring and Postgraduate Education

7Y/1
Supporting GP trainees preparing for the Clinical Skills Assessment (CSA) exam

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Background: It is well known that trainees can struggle to pass the clinical skills assessment component of the assessments for training for general practice. Failure has been linked to problems with communication skills and a rigid approach to consulting. In addition, trainees gaining their initial medical degree outside the UK have been shown to have a significantly higher failure rate than UK graduates.This innovative approach to supporting trainees aimed to promote a shared and active approach to learning.

Summary of work: Trainees were assigned to one of five groups, which were facilitated by two past trainees who had scored highly in the CSA exam. The groups met over 3 1 hour sessions, during which they role-played consultation scenarios and gave feedback to each other using the ALOBA approach. Feedback was gathered at the end of the final session from participants and facilitators.

Summary of results: Participants benefited by improving their feedback skills and had a sharper awareness of their behaviour in the consultation.

Conclusions: Due to the positive feedback, the CSA groups will continue, but a number of changes have been made to their organisation.

7Y/2
Enquiry-Based Learning: A different approach for General Practice teaching

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Background: General Practice (GP) trainees in their first two years of training (ST1 and 2) attend a series of regular educational sessions in addition to those provided by their departments. The traditional lecture-focussed approach of these one day teaching sessions was not felt to be meeting the educational needs of trainees so a new programme was planned. This was based on problem-based learning and the style of small group work used in the final year of GP training.

Summary of work: The learning in the sessions was by case-based discussion and role play prompted by a written scenario. The group were encouraged to identify their own learning needs and resource them in the sessions. In addition, the group developed skills in team working, communication

and self-directed learning. The sessions were evaluated to inform their future development.

Summary of results: The sessions were well-received by the trainees who valued them for their relevance to General Practice, peer support and interactive nature. The presentation will report the findings of the evaluation and the next steps for developing the sessions.

Conclusions: The presentation will consider the impact of the educational sessions on the educational and pastoral development of trainees, and the implications for GP educators.

7Y/3
GP practice emergency preparedness: a pilot needs analysis using high-fidelity patient simulators

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Background: By preparing for medical emergencies with the correct equipment, team response training, and protocols, primary care GP practices can greatly decrease the risk of an unfavourable outcome.

Summary of work: We conducted a pilot programme to establish the extent to which primary care practices were ready and equipped to treat common acute care emergencies and to strengthen their 'preparedness'. We delivered a mobile high fidelity simulation-training programme over a 6-month period. It consisted of three phases: 1. Needs analysis phase: Pre and post questionnaires to monitor changes in emergency preparedness at GP practices. 2. High fidelity simulation team training and system-testing phase (I hospital based, 2 practice based). 3. Evaluation of outcomes phase (including report and recommendations).

Summary of results: Four large general practice surgeries participated in the pilot programme serving a combined population of 24,000 patients. Areas for strengthening emergency preparedness were identified at individual, team and system levels. Reiterative SMART plans with GP teams were negotiated for in-house development training at each phase of the study. Results showed changes in system organization, revalidation of BLA and ALS and improved perceptions of safety climate.

Conclusions: Needs analysis through a combination of self-reporting questionnaires and high fidelity simulations exercises in situ can raise awareness of human and system areas for improvement in GP practices.

Take-home messages: A programme of reiterative full immersion simulation exercises involving GP practice response teams can increase confidence of clinical and non clinical staff and reduce anxiety to perform life-saving care.

7Y/4
Family Medicine registrars' need for and valuing of teaching knowledge and skills

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Background: Specialists-in-training (registrars) are usually involved in the training of undergraduate medical students, but seldom receive training on how to teach in our context.
Summary of work: This represents Phase 2 of a larger project investigating the influence of a 12 week module on teaching and learning on Family Medicine registrars' teaching practices. Current registrars' attitudes towards and confidence with teaching activities were explored for groups who had and had not completed the module.
Two focus group interviews were held with a total of seven third-year Family Medicine registrars before the module. Structured individual interviews were conducted with 11 purposively selected final-year registrars after completing the module. Interviews were audio-recorded, transcribed and analysed inductively using principles of thematic analysis. Ethical approval was obtained.
Summary of results: Both groups emphasised the need for this module in their training. Final-years were more confident than third-years in small-group and one-on-one teaching, and presentations. Stress levels for presentations were similar for both groups but final-years reported less stress for one-on-one teaching.
Conclusions: The module was well-received. Context has an influence on registrars' adaptation to their clinical teacher role.
Take-home messages: Registrars expressed a clear need to be proficient in teaching practices. These perceptions of respondents aligned with qualities expected of competent teachers.

7Y/5
Dermatology Rocks: an innovative approach to teaching dermatology to GP registrars

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Background: GPs commonly request dermatology presentations. Whether their perception is that they lack skill, knowledge or confidence is difficult to tell. Existing delivery modes vary from didactic presentations to small group tutorials. We devised an innovative model for teaching dermatology to GP registrars encompassing skill acquisition in a fun learning environment.
Summary of work: Workshop presented in a 3 hour module with varying delivery methods interspersed to maintain attention. Key pad use for anonymous responses creates a nonthreatening environment. A format for describing skin lesions is presented, practised in an interactive game, "Skin Heads", followed by a discussion of dermatological equipment used in General Practice.
Role plays using material from the "Skin Heads" are used to reinforce learning, with the workshop completed by using keypad responses to ascertain improvements in knowledge.
Summary of results: Both written and verbal feedback is consistently positive: e.g. "Excellent!! Great range of pictures. Common conditions"; "Great visual / interactive session, very practical"; "Reinforced structured approach to describing lesions".
Conclusions: Dermatology presentations of slide shows of rare and exotic diseases are superceded by this approach: an interactive, stimulating and more effective teaching method.
Take-home messages: Methodology for describing skin lesions. Demystification of dermatology by providing simple, not simplistic diagnostic framework. Learning through fun.

7Y/6
Learning Places and Learning Aims Competence-linked within a Postgraduate Family Medicine Training Program

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Background: Postgraduate Family Medicine Training Program in Spain is defined in terms of competences that appear as Best Practices to be acquired throught the whole training period at different Learning Places.
Summary of work: Postgraduate Family Medicine Training Unit at Cádiz (Andalusia, Spain) tried to identify optimum Learning Places for each competence Area from the Training Program. For this purpose a panel of experts was constituted. Best Practices identified to be acquired at different Learning

Places (Primary Care Healthcenter, Hospital or others) were regarded as Learning Aims for this specific training resident period (e.g. Neumology at hospital).

Summary of results: Panel comprised 16 experts (10 Family Medicine Tutors, 5 Hospital Specialist colleagues and 1 Paedagogical Expert) plus 8 residents in their final year training period. All of them analysed 15 Competence Areas, including 265 skills. Primary Care Healthcenter was regarded the best learning place to acquire competences concerning Prevention, Diagnosis Management, Therapeutical Approachment and Psychological and Emotional Disease Involvement. Hospital was identified as the best learning place to acquire competences concerning surgical specialists and others referred to sophisticated diagnostic or therapeutical techniques.

Conclusions: Identifying Learning Places to acquire competences from a Posgraduate Training Program can be useful to establish Learning Aims and to design Training Pathways for residents.

Take-home messages: "If you show me the best place to learn something, I will find the way to reach my aims."

7Y/7
A journey down a blind alley?

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Background: Trainees, whose careers in a Speciality have stalled, are sometimes advised to "try General Practice". Is this good advice or is it doing them a disservice? Most UK GP Educators and Education Managers believe that trainees migrating from another speciality have a lower chance of success than trainees making GP their first preference.

Summary of work: We are in a position to present data providing some evidence to support this hypothesis. We identify demographic characteristics of trainees who will fail.

Summary of results: Selection into UK General Practice is both evidence-based and highly reliable.

Conclusions: It is argued that almost all career changer who are successful at selection have the capability to become GPs but are most likely to fail because attitudinal inflexibility, being unable to adapt to the change from a secondary care milieu to that of primary care.

Take-home messages: Failure at a second career has a devastating effect on trainees and they may strongly resist the idea that they are failing again. It may be possible to predict which trainees will successfully make the transition and which will have difficulty.This information will be of use to Educators providing careers advice to Trainees who change speciality.

7Y/8
"Blended learning" for procedural skills: for experienced doctors too!

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Background: To meet the need of family doctors to train their procedural skills, the Dutch College of General Practitioners developed a blended learning programme.

Summary of work: The blended learning consists of studying instruction films and protocols before the training, practicing skills in a group, and viewing films when implementing the skill in daily practice.

Summary of results: Twelve top-priority procedural skills evolved from an e-questionnaire among family doctors (e.g. carpal tunnel injection, lipoma excision, IUD insertion). For each skill expert GPs made a protocol and scenario for an instruction film. Films were recorded in family practices, with both real patients and manikins. GPs (7 groups of 12) prepared their training by reading the protocols and viewing the instruction films. During the training they practiced on manikins, supervised by experts. The films remained available on the internet after the training. Self-evaluation took place.

Conclusions: The blended learning format stimulates GPs to perform new procedural skills and enhance old ones. Making professional instruction films is time-consuming and costly. However, these films form an important part of the training, both in priming the learner beforehand and for later reference in daily practice.

Take-home messages: For procedural skills training: invest in instruction films!

7Y/9
Barriers to Procedural Skills Acquisition Among Residents in a Canadian Family Medicine Training Program

Gavin Parker (*University of Calgary, Family Medicine, Pincher Creek, Canada*)

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Background: Performance of procedures in primary care is a necessary and rewarding aspect of providing comprehensive primary care. Studies have described the barriers that family physicians face in performing procedural skills, but few studies have looked at barriers from the perspective of residents. We described these barriers and inventoried the procedural skills residents intend on performing post-graduation.

Summary of work: We created an on-line survey of residents in a family residency program. Respondents listed the procedural skills they would feel comfortable performing if starting independent practice tomorrow and asked respondents to list what barriers they faced when learning procedural skills.

Summary of results: The top three rated barriers were: Lack of time devoted to procedural skills practice; Faculty who do

not perform procedures; and Privileging of procedures post training. A summary graph will be presented on the likelihood of residents performing select procedures once in practice.

Conclusions: Programs need to address the lack of opportunities for procedural skills training. Faculty development must be done to enhance this process. Government should be approached to create regulations to enable generalists to perform medical procedures.

Take-home messages: Our patient population requires we train residents capable of performing basic procedural skills. Ways to enhance this learning will be further studied in our program.

7Y/10

Supporting Newly-Qualified GPs - An Education Programme for Continuing Professional Development

__Aurelia Butcher__ *(Wessex Deanery, Dorset GP Centre, Bournemouth, United Kingdom)*
Clare Wedderburn *(Wessex Deanery, Dorset GP Centre, Bournemouth, United Kingdom)*

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Background: Transition from training schemes to independent practice can be daunting and lonely, as formal support ends. Educational support through this transition can bridge the gap by addressing specific learning needs of NQGPs, and by introducing and maintaining a small-group structure to develop ongoing learning and peer support, but provision is patchy.

Summary of work: Review of current educational support for Dorset NQGPs, assessment of NQGP learning needs, and implementation of an education programme to support their transition to independent practice.

Summary of results: We present findings from the learning needs assessment and views of the NQGPs in this case-based study. We show practical application of these results in the implementation of revised education programmes.

Conclusions: Education programmes should be tailored to the needs of members for learning to be specific, relevant and beneficial. Revision of our NQGP scheme has addressed these points and provides organised, well-researched programmes to support GPs from training to independent practice.

Take-home messages: Support for GPs in transition from training to independent practice is key; introducing small-group learning can promote an ongoing learning environment and peer-support; these are important for individual learning, and as proof of development for appraisal and revalidation assessments.

7Y/11

The mentoring effect on job satisfaction and career planning in a medical internship

__Eui Ryoung Han__ *(Chonnam National University Hospital, Office of Education and Research, Gwangju, Republic of South Korea)*

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Background: The purpose of this study was to investigate the mentoring effect in a medical internship and to facilitate the development of future mentoring programs for interns.

Summary of work: The study subjects were interns being trained at Chonnam National University Hospital, South Korea, 2011. Participants were asked to complete a questionaire about mentoring experience and job satisfaction.

Summary of results: 42.6% of participants had mentoring experiences and they had an average of 2.3 mentors. Mentees usually discussed career planning, concerns of personal life, and social life, in order of precedence. There was a significant difference between interns receiving mentoring and other interns without mentoring in the job satisfaction (p =0.003). The mentees who applied to surgical specialties had more positive perceptions about mentoring experience than other mentees applying to medical specialties.

Conclusions: We should expand and support mentoring program in the internship, which was initial step of medical career.

Take-home messages: Less than half of medical interns had mentoring experiences. Effective mentoring may help intern increase job satisfaction and plan a career.

7Y/12

How to improve new mentor teachers' performance in a medical school

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Background: A mentoring system is important in medical school. An excellent way to develop new mentor teacher capacity is through The Mentoring Education Programs acknowledge in a medical school, more experienced, effective and improve outcomes for learners. This program included modify structured (SOAP: Subjective Objective Assessment and Plan) manual. Objective: To compare the confidential scores of mentors before and after using SOAP manual.

Summary of work: Before and after using SOAP manual, we had surveyed with a structured Questionnaire for eight new mentors. The questionnaire had an Alpha Coefficient at 0.71.

Summary of results: Most mentors were male, 37.6±8.9years old with experience in the medical school about 1.5±0.5 years. Using SOAP manual, the confidentiality score of mentors were increased from 3.00±0.75 to 3.75±0.46 (out of 5) without statistically significant difference.

Conclusions: Using SOAP manual should enhance the confidence of mentors, and prepare the basic knowledge of problem solving in mentorship. Physicians are familiar with the SOAP in medical care, therefore, it is easy to utilize the improvements in communication between mentors and learners.

Take-home messages: Confidence of mentors could improve the mentorship system. The SOAP could beas a tool to assess and to manage students' problems.

7Y/13

Evolving curriculum design based on an iterative needs assessment program: Our strategy to maintain engagement of postgraduate trainees in Pediatric Interventional Radiology

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Bairbre Connolly (*The Hospital for Sick Children, University of Toronto, Diagnostic Imaging, Image Guided Therapy, Toronto, Canada*)

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Background: In our pediatric interventional radiology program we receive trainees with different skill sets, from a wide variety of backgrounds, including pediatric diagnostic radiologist and adult interventional radiologists. This creates different needs according to each individual. A preplanned fixed curriculum design was not effective in our program.

Summary of work: We established a routine needs assessment program at different stages of our fellowship based on: questionnaires, interviews, morbidity and mortality reviews and environmental scans. According to this feedback, the curriculum was adjusted on an individual basis.

Summary of results: Based in the needs assessment, we adjusted the time allocated to simulation sessions, task training, content of our lecture series and rotations outside our division/hospital. There was a positive impact in the levels of satisfaction of our trainees at the end of our fellowship program.

Conclusions: To engage Postgraduate Year 6 and higher in a teaching program can be a major challenge for the educators. Working with an evolving curriculum based on an iterative needs assessment program had provided us with an excellent way to keep our trainees engaged in learning and to fulfill their individual expectations in our subspecialty program.

Take-home messages: Evolving curriculum and needs assessment tools are valuable strategies in postgraduate training.

7Z Posters: Curriculum Evaluation

7Z/1

Physicians-Educators' Perceptions toward Forum as an E-learning Tool in Faculty Development Program

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Background: Faculty Development Programs (FDP) can endorse creating community of practice and benefit professional teaching. The study examined embedding forums as an e-learning tool within FDP for physicians-educators, aiming to promote their willingness to apply forums in their teaching.

Summary of work: FDP for physicians-educators at the Technion includes eight monthly meetings. During 2010-2011 five asynchronous forums were embedded in FDP with face-to-face meetings. For investigating participants' perceptions regarding the forum, answers to close- and open-ended questions, forums' discourse, and participants' reflections were analyzed.

Summary of results: Before FDP most participants declared lack of experience and about half were motivated to experience e-learning tools. After the FDP most participants appreciated forum's contribution for learning and collaboration and stated confidence in applying forums in their teaching. Analysis of changes along the program revealed that negative perceptions towords forum use for learning and socialization vanished while the presence of positive utterances increased. However, mentioning time consuming as a hindering factor increased along the FDP.

Conclusions: Embedding forums in FDP for physicians-educators can serve as a first significant step in assimilating e-learning tools in medical education.

Take-home messages: FDP can help overcome barriers towards assimilating pedagogical-technological tools in medical education.

7Z/2

Near zero interactions between education and health care sectors of a totally integrated system: a qualitative study

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Background: In Iran, the medical education system was totally integrated with the health care system in early 1985. In spite of some success stories, the outcomes are far from ideal. Clerkship field programs could offer local opportunities to strengthen interactions between the education and health care sectors of the integrated system.

Summary of work: This was a qualitative study. The setting was Urmia University of Medical Sciences. We conducted

semi-stuctured in-depth interviews with six students, three teachers, and three health care managers connected with the clerkship field training of the students. All the participants were selected on purpose. We voice recorded the interviews, transcribed, and read them iteratively. Finally, we coded, categorized, and summarized the data.

Summary of results: The findings were organized under three emerged themes of education sector, health care sector, and interaction between these two sectorss. Each main theme contained a number of subthemes. The study showed very clearly that the education and health care sectors interacted very weakly, and identified several barriers to effective interactions between the two sectors. The most important ones were cultural and communication barriers.

Conclusions: Although the education and health care systems have been structurally integrated for years, structural integration is not enough for constructive interactions.

Take-home messages: Continuous and concerted efforts to remove cultural and communication barriers are essential for successful interaction and therefore, integration.

7Z/3
Implementation of a continuing program of curricular evaluation

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Teresa Cortés (*National Autonomous University of México, Faculty of Medicine, México D.F., Mexico*)
Ileana Petra (*National Autonomous University of México, Faculty of Medicine, Mexico D.F., Mexico*)
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Background: Faculty of Medicine of the UNAM changed its curriculum in 2010, designing a program approach by competencies, with intermediate and final profiles. From there, a Curricular Assessment Committee was formed that designed a longitudinal assessment program, to check and replenish the academic program and the analyze achievement of the competencies.

Summary of work: The Committee prepared a viable assessment plan of easy instrumentation, simple, gradual, continuous, permanent, systemic and participative. It selected six areas to assess: students, teachers, subjects, infrastructure, research and achievement of competencies and established: areas, variables, indicators, assessment instruments, responsible of the implementation, analysis and integration of information.

Summary of results: They identified valid instruments (open, closed questionnaires, focus groups, headings, etc.), to provide information. Then applied them and evaluated the different areas, with the results of each year and at the end of each profile are analyzed to select the possible actions that must be taken.

Conclusions: The comprehensive curriculum assessment identifies the successes and failures of the curriculum.
Take-home messages: The presence of a standing Assessment Committee allows better coordination and comprehensive evaluation of a curriculum program.

7Z/4
Internal audit as a preparation for an external audit

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Background: An audit is an evaluation tool which can be used for quality procedures in education: it gives insight into the strenghts and weaknesses, and gives instructions for the improvement. External audits are performed for (residency training) program accreditation purposes. Can internal audits - performed by colleagues from the same hospital - be used as a preparation for external audits?

Summary of work: Three faculty members and one resident perform the audit. They belong to a discipline other than the discipline of the program. The quality of the program is discussed with only the residents participating in the program that is evaluated, based on a checklist. The internal audit takes place approximately one year before the external audit. A report is made and discussed with the residency program director and the educational board of the hospital.

Summary of results: Since 2009 our hospital started with an internal audit procedure. Seven residency programs have participated. A total of 58 residents were involved. Residency programs directors used the reports to improve their programs before external audit took place.

Conclusions: This tool is useful to prepare external audits. Faculty involved in auditing also learn of the process. Residents are satisfied, they feel heard.

Take-home messages: The internal audit is a tool with many positive side effects with regard to the quality of education.

7Z/5
Learning effect of small group role play and case discussion for multidisciplinary healthcare providers patients communication

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(Presenter: Nen-Chung Chang, Taipei Medical University Hospital, Division of Cardiology,Department of Internal Medicine, No.250, Wu-Hsing St., Taipei 11031, Taiwan, ncchang@tmu.edu.tw)

Background: We studied the learning effect of small group role playing and cases discussions on the healthcare providers-patients communications.
Summary of work: We divided 27 students into 3 groups. Each group included year one to four multidisciplinary students. Two multidisciplinary teachers participated in each class. Students experienced independent and teamwork learning by role play, cases discussion, and group written and oral reports. We used same questionnaire, totally 12 questions, before and after the course.
Summary of results: Understanding the importance of communication was the same before and after the course. Overall communication knowledge and skills, communication ability, law knowledge, understanding the role of individuals in a team, and patient protection ability much improved (P < 0.05). Ability of expressing empathy, ability of talks, interactive capabilities, listening skills, patients' experience understanding, team mutuality understanding, understanding the essence of doctors' attentions on patients as their loved, and self protection ability improved, but no statistical significance.
Conclusions: This diverse teaching model demonstrated much improvement on some items of knowledge and skills of communication. However, some items relate to patients' contact did not get significant improvement. This means clinical exposures is important.
Take-home messages: We suggest introducing this model to senior students. Longitudinal study is suggested for evaluating the long term effects.

7Z/6
Who make better prescribers: pharmacy interns or medical students?
Muirne Spooner *(Royal College of Surgeons, Medicine, Dublin, Ireland)*
Judith Strawbridge *(Royal College of Surgeons in Ireland, Pharmacy, Dublin, Ireland)*
Borislav Dimitrov (*Royal College of Surgeons, General Practice, Dublin, Ireland)*
Noel Gerard McElvaney *(Royal College of Surgeons, Medicine, Dublin, Ireland)*

(Presenter: **Tom Branigan**, Royal College of Surgeons, Department of Medicine, Beaumont Hospital, Dublin 9, Ireland, tombranigan@rcsi.ie)

Background: Medication errors commonly result in patient morbidity.
Summary of work: RCSI developed an online, problem-based prescribing module for the Masters in Pharmacy programme for pharmacy interns, and final year medical students. Both groups completed a post-module assessment. A comparison of results was conducted.
Summary of results: 163 pharmacy interns (PI) and 46 final year medical students (FYM) were assessed. Mean grade of

PIs was *!%, mean grade of FYMs was 64%. There was no difference in performance between two groups in 14 items, including management of nosocomial infections and warfarin titration. In remaining 23 items, PIs achieved significantly higher scores on items including drug schedules (P<0.00001), dose adjustment in paediatrics (p=0.003) and common side-effects (p=0.046)
Conclusions: Pharmacy interns demonstrate superior prescribing skills to medical students at completion of undergraduate training.
Take-home messages: Several groups have been extended limited prescribing privileges in controlled circumstances, e.,g. nurese practitioners. This study questions if pharmacists should be added to this group. It demonstrates the increased need to integrate healthcare profesional undergraduate training, to optimise synergistic learning and benefit from pooled skills.

7Z/7
Active-learning versus teacher-centered methods for learning women's health in medical school

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Ricardo C. Cavalli *(Faculty of Medicine of Ribeirao Preto - University of Sao Paulo, Gynecology and Obstetrics, Ribeirao Preto, Brazil)*
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Background: Women's health is five weeks discipline during the year IV in our medical course. Students cohorts are exposed to general obstetrics and gynecology in ambulatory settings. Cognitive activities on key topics complement the clinical experience. In 2011 formal lectures were replaced by seminars in the attempt to adapt teaching from passive to active process.
Summary of work: The comparative performance of passive learning (PL) cohort and active learning (AL) cohort was evaluated using writing tests and OSCE applied at the end of rotations.
Summary of results: The mean of writing test scores was 6.74 (95% CI: 6.51 - 6.96) in PL cohort, and 7.57 (95% CI: 7.34 - 7.79) in AL cohort (P<0.0001). The mean of OSCE scores was 7.75 (95% CI: 7.59 - 7.91) in PL cohort, and 8.12 (95% CI: 7.92 - 8.31) in AL cohort (P=0.004). Additionally, through Bland-Altman plotting, we find bias favoring OSCE in PL cohort 1.01 (95% LA: -1.68 to 3.71), and in AL cohort 0.55 (95% LA: -1.59 to 2.69).
Conclusions: Our data support the effectiveness of active learning to improve the gain of knowledge and skills associated with women's health disciplines.
Take-home messages: Replacing passive by active learning techniques is rewarding and must be sought in all phases of medical education.

TUESDAY 28 AUGUST 2012

7Z/8
Assessment of medical students' consultation: ambivalence in conducting an interview

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Luciana Omori (*University Hospital, School of Medicine, Universidade de São Paulo, Department of Pediatrics, Sao Paulo, Brazil)*
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(Presenter: Denise Ballester, University Hospital, School of Medicine, Universidade de São Paulo, Department of Pediatrics, Rua Luis Ferreira, 150, Sao Paulo 03072020, Brazil, deniseballester@gmail.com)

Background: Although observation of performance is essential to improve teaching practices, a key point is to understand the perceptions of students and patients.
Summary of work: 10 internship students had a consultation video-recorded. Students and parents were individually interviewed. Data were analyzed by qualitative methods.
Summary of results: Recorded Consultation Analysis: Students addressed the problems reported in the medical record without checking if they were issues for the parents. Aspects associated to illness were rarely explored while organic issues were prioritized. There was no shared decision making. Students´ Interviews: They acknowledged not exploring the main parent concern, even though believing they should have done it. They believed that explaining the disease was a way for addressing parent fears and concerns. They described shared decision making as parents' understandment of the explanations they offered. Parents´ Interviews: Few parents indicated that their main concern and fears were addressed.acknowledged not exploring the main parent concern, even though believing they should have done it. They believed that explaining the disease was a way for addressing parent fears and concerns. They described shared decision making as understanding by parents of the explanations they offered. Parents´ Interviews: Few parents indicated that their main concern and fears were addressed.
Conclusions: Students were ambivalent, acknowledging the importance of patient-centered care, but preferring to follow doctor-centered care. They confused concepts such as identifying the main complaint, exploitation of fears and shared decision making.
Take-home messages: The current curriculum framework has fostered imprecise concepts and uncertainties about how to proceed during the consultation.

7Z/9
Medical students' satisfaction regarding the teaching methodology applied in Faculty of Medicine, University of Khartoum 2010

__Ahmed Ishaq__ *(University of Khartoum, Department of Community Medicine, Khartoum, Sudan)*

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Background: Students' feedback is a strong parameter that can lead to fundamental changes in the applied teaching methods accordingly.
Summary of work: To evaluate the level of medical students' satisfaction regarding the applied teaching methods in the Faculty of Medicine -University of Khartoum. This was a cross-sectional community based study using a 12-item self administered questionnaire. Cluster formation of students was used. The sample size of 384 was divided equally over the three clinical undergraduate years. Simple random sample selection was then used for each cluster.
Summary of results: Students showed moderate satisfaction levels regarding clinical rounds and clinical pathological conferences, High satisfaction levels were obtained regarding self learning and periodic class tests, High levels of dissatisfaction were obtained regarding seminars, tutorials, assignments (feedback-required tasks) and rural residencies, while methods of lectures and practical laboratories recorded equal levels of satisfaction and dissatisfaction.
Conclusions: Methods as seminars, tutorials, assignments (feedback-required tasks) and rural residencies need re-evaluation as they don't meet the outcome expectations. Lectures and practical laboratories require further detailed investigation as they vary subjectively and couldn't be judged as a whole. Emphasis on self learning and periodic class tests is recommended to assure the
continuity of high satisfaction.
Take-home messages: The students' feedback is of great value and it is not to be ignored in improving the system of education.

7Z/10
I CAN! A graduate self-completion questionnaire evaluating medical curriculum outcomes: Development and validation

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(Presenter: Ioannis DK Dimoliatis, University of Ioannina Medical School, Department of Hygiene and Epidemiology, University Campus, Leoforos Panepistimiou, Ioannina 45110, Greece, idimolia@uoi.gr)

Background: Reliable and valid tools assessing medical educational environment exist. Our objective is to develop

and validate a graduate self-completion questionnaire evaluating graduates' medical abilities, not existed till now.

Summary of work: The I CAN!v0 questionnaire, based on the Tuning-Medicine Project and secondarily the European Core Curriculum, comprised of 104 closed questions, was piloted to 512 graduates from all seven Greek medical schools, 21 practitioners, and seven different undergraduate samples. Cronbach alpha, factor analysis, and overall mean score (OMS) comparisons were used to check reliability, validity, and sensitivity respectively.

Summary of results: All overall alphas were >0.95 while all subscale alphas were greater than expected. Factor analysis produced only one factor per level 1 outcome, except for 'practical procedures' that was split in two meaningful factors. OMSs ranged 44% (2nd-year students) to 81% (practitioners; p<0.001). Question mean score ranged 39% (blood transfusion) to 95% (measuring blood pressure).

Conclusions: The questionnaire's reliability was excellent (>0.90). Content validity was safeguarded by the tuning-medicine process, while construct validation revealed meaningful factors. Reasonable differences among progressively matured groups suggest good sensitivity, an indication for also good responsiveness. The tool differentiates well weaknesses and strengths.

Take-home messages: The I CAN!v1, a reliable, valid, sensitive and probably responsive tool is now available for graduates' abilities self-assessment and informed SWOT policy.

7Z/11
Development of an overarching evaluation framework for an undergraduate medical school

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Gary Hamlin (*Bond University, School of Medicine, Gold Coast, Australia*)
Clare McNeill (*Bond University, School of Medicine, Gold Coast, Australia*)
Audrey Chung (*Bond University, School of Medicine, Gold Coast, Australia*)
Rebecca Louis (*Bond University, School of Medicine, Gold Coast, Australia*)
Jenni Dyason (*Bond University, School of Medicine, Gold Coast, Australia*)

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Background: The School of Medicine at Bond University first enrolled students in an undergraduate MBBS curriculum in 2005. Since then the School has undertaken extensive evaluation of student and staff experiences. The breadth of evaluative activities meant that follow up and actions were not always optimised or communicated to stakeholders and response rates were often low. In 2011 the School undertook a review to ensure the number and scope of evaluations was effective and manageable.

Summary of work: The review began with identifying the range of surveys/evaluative activities used and their objective(s). An important aspect was to identify follow-up for each including feedback to participants. As a result the

School developed an integrated evaluation plan which reduces the burden on participants and clearly states follow up responsibilities. An important ongoing focus will be to re-engage stakeholders, especially students, with evaluation to maximise the reliability of information obtained.

Summary of results: This presentation will outline the process used to develop the evaluative plan, the major stakeholders involved and the activities included in the plan. Methods used to raise ongoing awareness and promote engagement with evaluation will also be included.

Take-home messages: Evaluation must be strategically targeted with obvious follow-up to optimise stakeholder engagement.

7Z/12
Correlation between qualitative and quantitative evaluation of BRUCE 1.0 at the Vrije Universiteit Brussel

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Background: In the Master program of Medicine at the Vrije Universiteit Brussel, the Brussels Clinical Evaluation (BRUCE) serves as a monthly student based evaluation instrument of the educational performance of clinical professors and departments. BRUCE started out as BRUCE 1.0 (paper version) and was used from February 2010 until June 2011.

Summary of work: Before introducing an electronic version, BRUCE 2.0, a qualitative and quantitative analysis of BRUCE 1.0 was done. The present study correlates both.

Summary of results: Two different situations appeared. On one hand there are questions with a high level of missing values and a lower mean and negative qualitative scores on relevance and clarity. On the other hand there are questions with a high level of missing values and a lower mean and no negative qualitative scores. Comparison of qualitative and quantitative study reveals why certain items have a high level of missing values and a low mean. The first situation reveals a construction flaw in the questions themselves, while the second situation reveals an effective qualitative problem within the internship.

Conclusions: Qualitative analysis helps to understand reasons for missing values and lower means.

Take-home messages: When validating an instrument combining quantitative analysis with qualitative analysis is indispensable.

7Z/13
Consistency of Teaching at Placement Hospitals: an Audit of Clinical Teaching at King's College London School of Medicine

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Teifion Davies (*King's College London, Institute of Psychiatry, London, United Kingdom*)

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Background: Medical students report variability in teaching core curriculum at placement hospitals especially in organization of teaching and range of topics taught. The medical school aims to monitor and compare teaching experiences at placement hospitals. We audited teaching experience at placement hospitals for Phase3 students (1st clinical year).

Summary of work: Medical students and clinical teaching staff across 13 placement hospitals were invited to complete an audit on: opinions on consistency of teaching core curriculum topics between placement hospitals; whether core curriculum clinical topics were taught; and, teaching duration on each topic. Multivariate analysis of variance (MANOVA) was used to determine significant differences in teaching clinical topics between hospitals ($p<0.05$).

Summary of results: Only 15% of students and 17% of teaching staff reported that good consistency of teaching was achieved. There were significant differences between hospitals in clinical topics taught and duration of teaching on each, $p<0.001$.

Conclusions: Inconsistencies in teaching core curriculum topics at placement hospitals are reported. Improvements may be achieved through greater emphasis on core curriculum and effective staff- student communication.

Take-home messages: Medical schools should ensure students have comparable clinical experiences and teaching at placement hospitals, and this should be monitored. Innovative ways of informing staff about weekly core curriculum themes may improve consistency of teaching.

7Z/14
Qualitative assessment of teaching methods in Medical Colleges in Iraq

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Background: Medical education in Iraq is poorly assessed and there is a general lack of documented knowledge about the challenges facing this field. The aim of this study was to identify strength and weakness as well as priorities for improvement in the current teaching methods in Hawler Medical University in Erbil, Iraq.

Summary of work: A qualitative study based on a self-administered questionnaire survey of a purposive sample of 83 teaching staff in Hawler Medical University was conducted.

Summary of results: The study revealed significant problems facing the existing teaching methods including having large number of students in the lecture hall (45.0%), having focused on teacher-centred teaching (45.0%) and lack of infrastructures and facilities (26.7 %). The priorities for improving the quality of teaching methods included adoption of small group teaching strategy in all study years (34.6 %), improving the infrastructure and facilities (34.6 %) and provision of continuous academic development programs for the teaching staff (24.3 %).

Conclusions: The existing medical education system face significant problems and it needs important and comprehensive improvements in different areas. There is a need for further research in this field to explore the identified problems in a more in-depth manner in order to better understand of the problems and needs.

7AA Posters: Communication Skills

7AA/1
Assessing the Value of Advanced Interview Skills Training for Second Year Medical Students at Ross University School of Medicine

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Background: The Association of American Medical Colleges (AAMC) recommends that aspiring physicians demonstrate competencies in communication skills that are tested on the USMLE Step 2-CS. Ross University's Behavioral Science Department designed the Advanced Interview Skills Training program for second year medical students to meet the AAMC expectations for good communication in a patient encounter. A training session was developed with students working in small groups with an MD instructor. Students identified key interview techniques on an interactive video using the Stanford Interview Checklist. A facilitator guided discussion followed for acquiring proficient communication techniques.

Summary of work: Students' performance on an OSCE with standardized patients was analyzed to determine interviewing competency. A questionnaire assessing the value of training was completed by students.

Summary of results: The majority of students perceived the training to be valuable. 80.1% of students scored higher than 80% on the examination with the best performances in the

competencies on the opening the interview, interview flow, information gathering and relationship skills.

Conclusions: The training was perceived as a positive experience, and outstanding performance on the examination showed proficient acquisition of interview skills.

Take-home messages: Advanced Interview Skills Training is a valuable program for improving the student's clinical competency in Medical Communication.

7AA/2
Analysis of the Adequacy of Communications Skills Training in the Systems Based Curriculum of Ross University School of Medicine

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Background: The value of good communication skills is recognized as an important and necessary competency for physicians. This is reflected by the recommendations from the Association of American Medical Colleges (AAMC) for competency training. The objectives from the AAMC' for patient engagement and communication skills are the ability to engage and communicate with a patient; develop a student patient relationship; communicate with cultural adverse patients and establish build and maintain proper relationships with patients' families. A new systems based curriculum was initiated at Ross University School of Medicine in September 2010 with Communication Skills training being a critical goal.

Summary of work: This study reviewed the curriculum to identify when the AAMC objectives for communication skills were met, by which method and also when these skills were specifically tested.

Summary of results: Analysis revealed that all of the communications competency objectives of the AAMC were achieved in the Systems Based curriculum at Ross in every semester including the fifth semester. Interview skills assessment was done in semester four following an Advanced Interview Skills Training program and in the fifth semester by an OSCE history taking interview with a standardized patient.

Conclusions: The systems based curriculum of Ross University has fully achieved the expectations of the AAMC objectives of communication skills training.

Take-home messages: Competencies expected for best clinical practice should be addressed in the curriculum.

7AA/3
How patient understanding impacts physician communication

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Background: Effective communication requires that physicians recognize individual patients' knowledge of their disease. Anticipation of even a moderate level of 'common knowledge' or understanding may lead to communication difficulties and inappropriate expectations in patient management and treatment plans.

Summary of work: This study surveyed high-risk patients and their families to identify 1) basic knowledge of risk factors, 2) presenting symptoms of stroke and 3) response if a stroke was suspected. These findings were correlated with standardized training scenarios to identify effective communication skills.

Summary of results: 87% of respondents could identify one stroke risk factor as well as one stroke sign. Only 40% could identify 3 risk factors or 3 signs. Increased knowledge was correlated to higher education and younger age. The majority of respondents identified television as their main source of information.

Conclusions: This information may be useful in planning communication training for health care professionals and public awareness campaign for patients and their families. However, further studies are necessary to determine the exact source of the information from the television

Take-home messages: The degree of understanding of disease processes by patients and families can present a challenge to effective communication. Appreciation of this should be included in health professionals' communication training.

7AA/4
Clinicians Beyond Clinic: An Institutional Ethnography of Integrated Care in a Non-Healthcare Setting

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Background: Medical education prepares clinicians for practice in clinical settings. Yet a significant proportion of clinicians' practices (e.g. written communication) cross clinical borders into integrated care contexts, where clinicians must translate their knowledge for use by non-healthcare professionals.

Summary of work: We have begun to study integrated care in the context of caring for children with disabilities in the special education context within school systems, using institutional ethnography. The current session will describe preliminary results from an in-depth exploration of integrated care teams and work processes in the school setting.

Summary of results: We discuss a preliminary map of findings and highlight: 1) how healthcare documents function in special education and 2) how distinctive professional cultures influence the integrated practices of health and non-health professionals working to address the needs of students with disabilities.

Conclusions: An institutional ethnography of integrated care allows the problem to be studied as a complex social phenomenon amenable to change. Documents constitute a critical site for improving how clinicians are represented -- and how their expertise is taken up -- in the non-healthcare setting of education.

Take-home messages: This is the first in a series of projects that will map how health professionals can effectively function in non-health domains where health professional practice is needed.

7AA/5
SBAR: The Communication Tool that hasn't been Communicated?

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Background: The SBAR communication tool has been developed to make patient handover and staff communication more systematic, reliable and precise. It is now recommended for use by the NHS Institute for Innovation and Improvement.

Summary of work: As the recommended tool in a district general hospital in Kent, the research was into the extent of use of SBAR. Questionnaires were distributed to evaluate current staff understanding and use of the tool. Responses were analysed from nurses, consultants and Foundation Year 1 doctors.

Summary of results: All nurses & 92% of doctors correctly identified SBAR as a communication tool, but 5 consultants had never heard of it. All nurses use the tool but only 54% of doctors were actively using it. 25% of doctors admitted having had no teaching/formal training on SBAR, 38% had never used the tool. 81% of nurses felt that doctors were not

fully competent in SBAR. 86% would like to see doctors using it more often.

Conclusions: Findings indicate that understanding and use of this tool is limited. A clear educational gap exists and more needs to be done to educate/train staff about SBAR and its benefits for patient safety/care.

Take-home messages: Better communication and training on the SBAR tool is needed.

7AA/6
General practitioners' experience in teaching medical students clinical communication skills

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Background: Despite the great value of communication and teaching skills for the future of general practice, there is still little known about the GP's view and experience in teaching communication skills.

Summary of work: A qualitative focus group interview study was carried out. Two focus-group meetings were held. Each group consisted of six GPs who taught clinical communication skills. They were asked about their experience of teaching and the transcriptions of these meetings were analysed.

Summary of results: Fifty items were obtained from the focus-group meetings. These items were divided into the following categories: Lack of pedagogy of teaching and theoretical knowledge, pressure on time, and autonomy vs. structure and templates.

Conclusions: This study shows that general practitioners who teach clinical communication feel challenged by the lack of pedagogical theory and training. Another issue is lack of time. Their challenges and concerns can be summarized as a sense of lacking an academic environment for the development and teaching.

Take-home messages: GPs are being asked to take new academic roles for which they have little formal training. Many GPs feel uncertain as a teacher due to lack of the theoretical and pedagogical knowledge of teaching. Their challenges and concerns can be summarized as a sense of lacking an academic environment for the development and teaching.

7AA/7
The Do's and Don'ts of Communication to Patients: The Dental Students' Learning Experience from a Communication Course in Dentistry, Chiang Mai University, Thailand

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Background: One of the important competencies for dental students is to communicate with patients effectively. A communication course has never been provided for them in the core curriculum. A specific communication course was then constructed.

Summary of work: The dentist-patient communication course was created as an elective course for twelve sixth year dental students. The main objective emphasized the enhancement of students' competence in inter-personal communication, especially with patients. The course consisted of three parts: self-assessment tools for understanding themselves, the students' experience in success and failure in cases of patient communication and recommendations for communicating with the patients.

Summary of results: The students discovered themselves through four self-assessment tools. Both successful and failed cases of communication with patients were shared in the class via role-playing performances. The do's and don'ts of communication to patients were important forthcoming recommendations.

Conclusions: The experience of the students in this course illustrated important messages from the senders' perspective, according to the communication theory. Both verbal and nonverbal communication were also considered. The course could extract the students' experience and advance their awareness in communication with patients.

Take-home messages: The advantages of this communication course should be presented and extended for all students to improve the dental students' competence.

7AA/8
Transfer of clinical communication skills training from workshop to workplace: perceptions of veterinary students

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Background: Mechanisms of transfer of clinical communication skills from the veterinary curriculum to the clinical setting are not well understood.

Summary of work: The preclinical veterinary students in this study had participated in clinical communication skills training using an evidence-based consultation structure, the Calgary-Cambridge guides. Students self reflected and received peer feedback on their live and videotaped role-plays. The students later spent time in veterinary practice as part of their preparatory and clinical extra mural studies. Qualitative data was collected from students participating in focus group discussions. Interview questions were structured to gain information about students' perceived value and importance of their training and how best to facilitate the transfer of these skills into clinical practice.

Summary of results: Preliminary findings of this study will be presented with a view to develop a realistic understanding of factors involved in the transfer of clinical communication skills from the University to the workplace and in assisting students in the development and maintenance of these skills throughout professional life.

7AA/9
The construct validity of written assessment to assess communication skills in first year medical students

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Background: Communication skills need to be taught gradually based on development of other clinical skills. The practical assessment, such as OSCE, is commonly used to assess communication skills among undergraduate students. This method requires high cost and complex organization. Hence, we developed written assessments in an essay format to assess communication skills in the first year communication block. This study was conducted to investigate the construct validity of written assessment to assess communication skills by correlated the result of written and practical assessment.

Summary of work: A cross sectional study was applied among the first year students. They were given written assessment in Modified Essay Questions (MEQ) format and practical assessment (OSCE) in one station with simulated patient that is videotaped.

Summary of results: The measurement of reliability was achieved by Kappa coefficient for inter-rater reliability of MEQ is 0.707 and practical assessment 0.735. The correlation coefficient between written and practical assessment from two examiners ranges between 0.063 – 0.127 (p>0.01).

Conclusions: The result showed that correlation between written and practical assessment was not significant. This mean that written assessment had a low concurrent validity to assess communication skills.

Take-home messages: Written assessment could not predict the performance of communication skills in practical assessment. Even though written test is reliable, but it has a low validity in assessing performance of communication skills.

7AA/10
Effect of Early Patient Contact program on performance in examination on communication skills in a University Teaching Hospital in UAE

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Background: Good communication is the most important thing, takes a long time to develop and is difficult to master. The objective of the present study is to assess whether early patient contact (EPC) program had an effect on performance in examination on communication skills.

Summary of work: The study sample included 123 first MBBS students of GMU, Ajman during academic years' 2010-11& 2011-12. The students who consented for EPC posting as elective during Communication Skills Course constituted group A and rest of the students constituted Group B. Group A had 50 students and Group B had 73 students. A validated, pilot-tested Van Dalen et al. 'paper-and-pencil test' and OSCE stations were used to evaluate all the students' on clinical communication skills. The data was analysed using SPSS 19.

Summary of results: The mean scores for Group A who underwent EPC and Group B who did not undergo EPC were 81.13% & 73.19% in OSCE, 63.02% & 61.31% in paper-and-pencil' test and 67.21% & 64.28% in total scores obtained respectively. The difference in mean scores was statistically significant in the case of scores obtained in OSCE (p< 0.01). All other differences observed were not statistically significant.

Conclusions: EPC program helps students to acquire better communication skills as seen by scores obtained in communication skills test especially in the OSCE.

Take-home messages: EPC program should be introduced in first year of medical school to improve communication skills of students.

7AA/11
Seminar on the communication training implementation for faculties in dental educational institutions

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Background: There is a recent increasing need for communication training in health care education. Faculty development to facilitate such training is one of the urgent tasks. To cope with this serious problem, seminars on the training implementation for faculties in dental educational institutions have been held in Japan sponsored by Japanese Dental Education Association . We described the content of the seminars for beginners and reported the results of the questionnaire administered to the participants.

Summary of work: The seminars for beginners consisted of 2 days, and were delivered 4 times between 2007 and 2011. The participants were asked to answer the questionnaire after taking the course.

Summary of results: There were 121 participants from 30 institutions in all 4 seminars. Eighty-five percent of the participants answered "Yes" and 13% answered "Somewhat Yes" in a 4 point scale to the question whether this seminor was useful or not. Most of the participants answered "realised or understood the importance and necessity of communication" and "understood the role of facilitator" for the question on what was good about this seminar.

Conclusions: These seminars made participants understand that communication as well as a facilitator's role are important. The seminars were also highly evaluated by the participants.

Take-home messages: This seminar will be applicable to the other health educational fields.

7AA/12
Simulated Three Person Consultations: A Useful Learning Experience for Foundation Doctors?

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Background: Consultations in which patients are accompanied by relatives or carers are frequently encountered by foundation doctors. A communication skills session was designed for foundation year 1 doctors at Leighton Hospital to practice simulated three person consultations. The aims were to cover important areas in the foundation programme curriculum and to build on communication skills acquired in medical school.

Summary of work: Six scenarios were planned for foundation year 1 doctors to practice with simulated patients and relatives. Sixteen doctors participated in the session. Each scenario was filmed and observed by other trainees. The trainee then watched the session back and feedback was given.

Summary of results: The doctors gave the session a mean score of 9 out of 10. Whilst they found the session challenging, they had positive comments about the value of simulated three person consultations and peer learning.

Conclusions: Most junior doctors have had comprehensive communication skills training as students. However, the three person interview is a challenge which requires advanced

skills. Simulated three-person interviews help to develop those skills further.

Take-home messages: The simulated three person consultation is a useful learning tool for foundation doctors and will help in their clinical practice.

7AA/13
Learning communication with children - challenge with babies

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Background: As a part of their communication skills studies, students learn communication with children and parents in their 5th year paediatric course. The aim of this study was to assess (1) What challenges students experience in communication with children and their parents, (2) How do these challenges change during the course.
Summary of work: Data were collected with a web-based self-assessment before and after the course. Thirty-seven students (59%) answered the survey which consisted of statements with 5-point likert scales (e.g. I feel safe communicating with infants, toddlers, adolescents or parents, from disagree to agree) and open-ended questions. Wilcoxon test was used to statistically test changes. Open-ended answers were analysed with content analysis.
Summary of results: The smaller the child was, the more insecure the students felt. However, the mean values improved during the course from 2.97 (SD 0.99) to 3.66 (0.77) for communicating with infants (p=0.003) and toddlers (3.54 to 4,07, p=0.007) but less for adolescents and parents (3.84-4.14 and 3.97-4.14, respectively, p=ns). Age-related pattern and improvement was repeated also for other questions e.g. clinical skills and empathizing with patients.
Conclusions: The students' communication skills, particularly with small children, improved during a paediatric course. This learning process is important for students' confidence and later professional competence.

7AA/14
Even a short rhetorical training for medical students improves information recall of medical laypersons in simulated informed consent talks

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Background: Pre-interventional informed consent talks (ICT) are crucial in patient care. However, studies could show a poor recall of facts. A proper training scheme for conducting ICT is still missing.
Summary of work: We designed a communication course synthesizing three frameworks (Brown, Paterick, Baile) with main focus on reduction of cognitive load. We conducted a prospective randomized controlled cross-over study with 30 medical students (MS). Students conducted three different ICT with three different medical laypersons (ML): at the beginning (O1) and after each intervention (O2, O3). After each ICT, ML wrote down all information remembered (main outcome).
Summary of results: ML remembered more facts at O3 compared to O1. The significant improvement was observed after MS had the communication intervention. There was no difference in which order the MS received the two interventions.
Conclusions: Specific training in conducting ICTs can enhance information recall in ML and is a crucial step to enhance patient safety. Further studies should address the transferability into daily clinical routine with doctors and actual patients.
Take-home messages: Even a short communication training with focus on reduction of cognitive load improves information recall in medical laypersons and should be part of all medical school curricula.

7AA/15
The teaching of the doctor patient relationship according to patients at a university hospital in Sergipe, Brazil

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Background: The doctor patient relationship has been considered the basis for a quality service, although it is not at the forefront of education for undergraduate medicine in Brazil.
Summary of work: In order to know the patients' perception of issues of learning in a university hospital in the state of Sergipe, 30 people of both sexes (21F, 9M) with a mean age of 50 years, and low educational level (15) answered an interview.

Summary of results: Most (20) believes that the doctor patient relationship should be the subject of learning in college, but 15 indicated that the innate personal characteristics are key influencers for the establishment of the relationship, suggesting that education is not entitled to enable the student to foster a quality relationship. Despite this, the way teachers relate to students or other colleagues was seen as an important model for student development for 25 participants. Finally, it was found that when the patients do not consider the relationship with their doctor satisfactory, they exchange the professional until they find one they like (21).

Conclusions: These results suggest the importance of the doctor patient relationship in treatment adherence and patient satisfaction.

Take-home messages: This theme discussion is very relevant in the medical teaching.

7AA/16
An effective method of teaching clinical inter-professional presentation skills

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Background: Clear and succinct verbal inter-professional communication is essential in patient referrals, emergency situations and professional examinations. However students often find this skill difficult to grasp, partly due to greater emphasis of medical curricula on acquiring medical knowledge and less so on providing a framework to communicate this knowledge. To address this we introduced a teaching method at an early stage of medical students' training to improve their clinical presenting skills.

Summary of work: Third year medical students (n=229) attended workshops focusing on deconstructing effective clinical presentations into a framework of components, with small-group facilitated sessions where students practiced implementing the framework in clinical presenting. Students completed questionnaires, scoring on a ten-point Likert scale their self-reported confidence in clinical presenting (CCP) and effectiveness in clinical presenting (ECP) pre- and post-workshop.

Summary of results: Students reported a significant increase in both their confidence (67% median improvement in CCP, p <0.0001), and effectiveness (67% median improvement in ECP, p <0.0001) in presenting clinical data. They strongly agreed these workshops should be integrated into their medical curriculum.

Conclusions: Despite only starting their clinical training, students found our workshop extremely useful in improving their clinical presenting skills.

Take-home messages: Medical students should be taught clinical presenting skills at an early stage of training.

7AA/17
The Urology Clinic Letter: Informative or Ineffectual?

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Background: Written correspondence from urology appointments are key communication tool, representing permanent legible record of discussions and decisions. Despite its vital importance, few clinicians receive formal training in letter writing or feedback on the quality and style.

Summary of work: Reviewed practice within our department to explore influences on letter style and quality, aiming to offer feedback and trying to improve consistency and uniformity of communications. Retrospective review of sample clinic letters from clinicians in our department for index conditions (raised PSA and male urinary symptoms) enabling comparisons in style and content. Reviewers blinded to author's identity and grade and used the validated Sheffield Assessment Instrument for Letters (SAIL).

Summary of results: There was a consistent trend of brevity of letters as authors became more senior. Letter organisation was not associated with grade, but author's tended to maintain a consistent styles enabling matching of letters.

Conclusions: Wide variation in styles and quality may make it more difficult for GPs and patients to interpret and compare correspondences. Feedback was provided to clinicians leading to development of a consensus on letter writing, with plans to re-audit in near future.

Take-home messages: These scoring systems offer a benchmarking tool for monitoring and assessing clinicians and trainee's correspondence skills over time.

7AA/18
Advanced Interview Skills Training (AIST): Teaching Patient Interviewing Using a "Brick and Click" Blended Learning Approach

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Background: A majority of today's medical students would not first associate cut-and-paste with scissors and glue. Subsequently, instructional methods are changing rapidly. Blended learning methods, "brick and click", are emerging through advances in E-learning technologies. For instance, recently designed video editing software aids in the teaching of interviewing skills. Standardized patient programs and Web-based assessment tools match contemporary learning styles. The purpose of this communication is to demonstrate the use of blended learning methods to improve clinical skills. A main objective is to demonstrate the feasibility of using a blended learning method for an Advanced Interview Skill Training Program (AIST) in the pre-clinical years by stressing the integration of E-learning technologies.

Summary of work: A multi-semester/multi-disciplinary advanced interviewing skill training program (AIST) was developed using a blended learning method of instruction. Instructional components which were used and will be highlighted included interview training, via Doc.com and Polycom; physical examination and communication training using standardized patients; video-editing technologies and learning products; small group facilitation; and OSCE assessment with feedback via MetiLS software. AIST emphasized contemporary-students' learning styles with the overarching goal of using a blended learning method to enhance interviewing skills training.

Summary of results: Students reported increased clinical abilities to: • Demonstrate advanced interview skills. • Present a brief oral report of the case. • Perform a physical examination relevant to the case.

Conclusions: Instructional methods are changing rapidly. Blended learning methods, "brick and click", are emerging through advances in E-learning technologies.

Take-home message: Current educators not only need to consider, rather, they accept the necessity of using a blended learning method for an Advanced Interview Skill Training Programs (AIST) in the pre-clinical years by stressing the integration of E-learning technologies.

7BB Posters: Teaching and Learning Methods and Students' Learning Styles

7BB/1
Learner styles and practical performance of Basic Life Support

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Background: Learning and training Basic Life Support (BLS) - especially external chest compressions (ECC) within the BLS-algorithm - is essential in resuscitation training for laypersons as well for health care professionals. The objective was to evaluate the influence of learner styles adapted to Kolb on the performance of BLS.

Summary of work: First-year medical students without previous medical knowledge were assessed for learning style evaluation with a questionnaire adapted to Kolb (assimilator, converger, accommodator, diverger). All participants were tested concerning their practical performance concerning BLS in a single-rescuer-scenario before and one week after training in a standardized BLS-course with 4-stage-approach-method.

Summary of results: Data from 720 participants were evaluated: 250 (35.5%) classified as convergers (C), 235 (33.4%) as assimilators (AS), 99 (14.1%) as accommodators (AC) and 32 (4.5%) as divergers (D; n=88; 12.5% not explicit). No difference was detected in respect to gender. Practical performance in ECC was evaluated for every learner group, but no statistical significant difference was detected.

Conclusions: Independently of the different learner styles reported, practical performance was comparable between groups. The used 4-stage-approach-method seems to reach the different types adequately.

Take-home messages: Different learner types are reached by 4-stage-approach-method adequately.

7BB/2
Could the learning style of a student be identified by the tutor in small group sessions?

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Background: Students' learning style may play a role in their response to the tutor's guidance and hence has impact on their learning.

Summary of work: 66 third year medical students in a 7-year medical school program joined this study. Small group sessions were video-taped. Based on students' behavior characteristics, 3 checklists were developed: Kolb's learning style, Kolb's learning mode and Participating and learning

attitude. Each of 11 participating tutors was asked to identify the behavior characteristics on checklists and also made a global rating of the learning style and learning mode for each student.

Summary of results: The correct identification of learning styles by the tutors was around 30%, highest for Converger, lowest for Diverger. For the learning mode, the correct identification was around 45%, highest for AE and lowest for CE. Among the 5 attitudes, most of the Divergers were identified as active and logical, the Convergers as active and either logical or intuitive, the accommodators as active but adherent, for the assimilators, they scattered among four patterns (including passive).

Conclusions: Tutors have difficulty to identify students' learning style; however, is easier for the learning mode. Diverger's behavior is more characteristic and Assimilator's is less.

Take-home messages: A reliable tool to better understand students' learning preference may be needed.

7BB/3
Interaction of Learning Styles, Preparation for OSCE and OSCE Outcome

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Background: Kolb`s concept of learning styles is a widely used model describing the different learning types with their specific approach to problems and learning objectives. We attempted to identify relations between the personal learning style and the factors for a successful result in the OSCE.

Summary of work: We determined the learning styles of n=956 students after the physical examination course or Internal Medicine course using the Kolb Learning Style Inventory. Furthermore we asked questions about materials and methods they used for their OSCE preparation. Our faculty provided a lot of possibilities, e.g. videos, scripts, peer classes. In a cross-correlation analysis the individual learning style was compared with the results of their OSCE as well as the materials and methods they used for their preparation.

Summary of results: There was no significant dependency between the learning style of the students and their outcome in the OSCE. Style dependent factors for a successful preparation could be identified.

Conclusions: The special learning types mean no advantage or disadvantage in the OSCE results. Different learning preferences, based on different learning strategies in the preparation phase should be considered by the faculty.

Take-home messages: Every faculty should offer students different didactical ways and materials for OSCE preparation to achieve the best possible results.

7BB/4
Learning style preference of medical students as predictor of educational program efficiency

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Background: Students' learning style (LS) is formed both by personal characteristics and curriculum. The research goal was to determine whether enough learning opportunities are provided to form efficient LS.

Summary of work: Students of Karaganda State Medical University filled 2389 Kolb's LS inventories, aimed to measure reflective observation (RO), abstract conceptualization (AC), active experimentation (AE), concrete experience (CE). Statistical analysis included factorial ANOVA by categorical predictors: instruction language (Russian, Kazakh), year of study (1 to 5), residential background (rural, urban).

Summary of results: ANOVA revealed that instruction language was the most significant predictor, followed by residential background, combined year of study and residential background, and combined year of study and instruction language. Students studying in Kazakh demonstrated the highest RO, and the lowest AC. For Russian language of instruction, it was the same, but AC was significantly higher. AC was higher for students from urban areas.

Conclusions: Students struggle putting knowledge gained from RO into practice and form their own understanding based on experience (AC). Students from rural areas and studying in Kazakh struggle more. Curricular changes are needed to promote development of AC in medical students.

Take-home messages: LS preferences are individual, but still may guide curricular changes and predict efficiency of educational program.

7BB/5
Impact of study approach and stress on selection for medical studies in France

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Background: Selection for medical studies in France occurs at the conclusion of the First Year Common Health Studies (PACES) by means of a written exam. Grades from the secondary school leaving exam and family social status have been shown to affect students' chances of success.
Summary of work: To explore the relationship between students' learning approaches and selection for medical studies, a tool based on John Biggs' R-SPQ-2F questionnaire enriched with questions regarding stress and work practices was developed (n = 1989).
Summary of results: Preliminary models with student characteristics (gender, secondary school study concentration and leaving exam grade) reveal the same trends for students taking the exam for the first or second time. Elements that contribute to a higher grade point ranking include a "deep" motivated approach, a significant amount of personal study time and better stress management. A "surface" motivated approach and studying in isolation contribute to lower rankings.
Conclusions: This paper will present a detailed analysis of the outcome of the May 2012 selection exam with respect to stress, study methods and R-SPQ-2F profile.
Take-home messages: Exploring individual differences in study approach will help identify strategies to promote success among students from non-traditional backgrounds.

7BB/6
Effect of learning approaches of medical students on their exam scores and career selection

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Background: Aim of this study is to determine learning approaches of the medical students and show whether there is a relationship between learning approaches and exam scores and career choices.
Summary of work: In education period 2011-2012, we determined learning approaches of the Fourth-term-medical students of the Akdeniz University. We used a questionnaire to determine career choice and R-SPQ-2F questionnaire developed by Biggs. Exam scores which had been completed at first semester of education period were evaluated to exam success.
Summary of results: Distribution of the learning approaches revealed that 51.2%, 48.8% of the students had deep and surface approach, respectively. Mean scores of the students having deep approach (70.0) had higher scores comparing to surface ones (69.7). However, this scores had not a significant difference (p>0.05). Comparison of the career selection of both groups revealed that 95.2% of students having deep approach and 88.3% of students of surface approach wanted

to be specialist. Deep approach was selected 64.2%, 34.0% in medical sciences, surgical sciences, respectively. Similarly, surface approach was selected 68.22%, 29.8% in medical sciences, surgical sciences, respectively. There was no significant difference between two groups comparing learning approach and career selection.
Conclusions: As a conclusion, no relationship was found between exam scores of the learning approach and career selection.

7BB/7
Study on correlation of Achievement Goals, Learning Strategy and Motivation of Medical Students

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Background: The purpose of this study is to investigate medical students' pursuit of achievement goals and the relationship between achievement goals, learning strategy and motivation.
Summary of work: A sample of 270 freshman and sophomore of premedical, and sophomore of medical school participated in this study. The instruments used in this study are Achievement Goals Scale and Self-Regulated Learning Strategy Questionnaire.
Summary of results: Achievement goals of medical students are oriented moderate performance-approach, a little high performance-avoidance, and high mastery goal. About 40% students are high or low in all three goals of achievement goals. The most adaptive learners in learning strategies, motivation, and school achievement are students of group 6 which are high in both performance-approach and mastery goals, but low in performance-avoidance goals. Performance-approach goals are related to deep, metacognition, time-management and task-value, and the best predictor of academic achievement. Performance-avoidance goals are negatively related academic self-efficacy and action control. Mastery goals are the best predictor of all learning strategies and motivation except time-management, but not related to academic achievement.
Conclusions: Mastery goals and performance-approach goals are adaptive goals in academic context.
Take-home messages: Instructors should closely observe students' achievement goal orientation and at the same time enhance performance approach goals or mastery goals and drop the level of performance avoidance goals.

7BB/8
A study of learning preferences and learning styles amongst final year medical students: Is there a difference between undergraduate and graduate-entry students?

TUESDAY 28 AUGUST 2012

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Background: Several medical schools in UK have designed curricula specifically for graduate-entry students, and they are integrated with undergraduate students during their clinical training. The purpose of this study was to identify whether learning preferences and styles differ between undergraduate and graduate-entry students.

Summary of work: 129 final year medical students from Nottingham University completing their clinical attachment in Royal Derby Hospital were given a descriptive questionnaire. Seven-point Likert scale for learning experiences were used to assess learning preferences, whilst the Honey and Mumford Learning Style Questionnaire assessed learning styles.

Summary of results: 100 out of 129 students responded. 79% were undergraduates (age range 22-25) and 21% were graduate-entries (age range 24-40). Both groups preferred an interactive and hands-on approach to learning. The predominant style was the 'reflector', with a mean score that was the highest and statistically significant compared to other styles (p values<0.05). Both student groups also shared similar 'reflector' style with no statistically significant difference between their mean scores (p=0.473). Correlations were also seen between many learning preferences and styles in both groups.

Conclusions: Regardless of background, medical students share similar learning preferences and styles.

Take-home messages: This study appears to support the view that trainers can employ similar teaching approaches for both undergraduate and graduate-entry students.

7BB/9
Personality types of medical student: who they are and how they learn

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Background: Jungian personality types have been used to explore about learning and self-development in educational contexts. According to this theory, people can have one prenominant attitude of attention focus - extroversion and introversion -, one perception function - intuition or sense - and one judgment function - thinking or feeling, that combined define a personality type.

Summary of work: This cross-sectional study of 215 undergraduate Brazilian medical students aims to analyse their personality types, using a Brazilian Typology Evaluation Questionnaire (QUATI) and possibilities of gender correlations.

Summary of results: The majority of students analysed were identifyed as "extraverted" (56%). "Thinking" was the less used function (60%). "Intuition" as principal function was more frequent between man, although "feeling" was prevalent among woman (P=0,016). The predominant personality type was "extroverted feeling with auxiliar sense" (22,8%), than "extroverted feeling with auxiliar intuition" (16,3%) and "introverted feeling with auxiliar sense" (15,3%) were also identified as important types.

Conclusions: Based on the students' personality types and its styles of receiving, perceiving and judging information, different teaching methods and interventions can be proposed for a more effective learning.

Take-home messages: Further specific studies about it could be useful to estimulate and develop both attitudes and all the perceptive and judgment functions at teaching-learning environments.

7BB/10
Should we teach using schemas? Evidence from a randomized trial

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Background: Schema-based instruction may alter knowledge architecture and diagnostic reasoning strategies through the provision of compiled information. The effect of schema-based instruction on diagnostic accuracy and knowledge architecture has not been rigorously tested.

Summary of work: Fifty-three second year medical students were randomized to receive either a schema(n=26) or traditional (n=27) instructional framework to learn four cardiac lesions on a high fidelity cardiopulmonary simulator. Students underwent individual written and practical tests. The practical test assessed 2 taught lesions and 2 untaught lesions. A majority of students (n=37) completed follow up written testing 2-4 weeks later.

Summary of results: Diagnostic success was higher in the schema-based instruction group for taught lesions (mean difference=38%, 95% CI 20-56%, p<0.001) and untaught lesions (mean difference=31%, 95% CI 15-48, p<0.001). Students receiving schema-based instruction performed 38% better on diagnostically relevant knowledge (p<0.001) and no different on general cardiac examination knowledge questions (p=0.7). Results on the written test remained unchanged on follow up testing 2-4 weeks later.

Conclusions: Schema-based instruction was associated with improved retention of clinically relevant knowledge and diagnostic performance among novices. This study provides important proof-of-concept for a schema-based approach.
Take-home messages: Schema based instruction improved retention of relevant knowledge and diagnostic success in novice learners.

7BB/11
Serious Games as an innovative tool to teach clinical decision making in acute medical scenarios

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Background: A recent development in technology based learning is serious gaming (SG), whereby the features and qualities of entertainment games are harnessed and developed into educational materials. SGs offer a number of benefits including simulation of real work features (e.g., multiple characters to create a work team), experiential learning, and better preparedness through role play.
Summary of work: We have designed and are currently developing a game to teach the management of cardiac arrhythmias and are piloting another game on managing adult asthma. The arrhythmia game will be used to evaluate the learning value of SGs in teaching decision making, medical student attitudes to learning through SGs and requirements to develop SGs without high resource investment.
Summary of results: We will (1) critically discuss SGs in the market to give an insight of what SGs are and key considerations in their development; (2) demonstrate a finished SG; (3) present the results of the evaluation of the arrhythmia game including data on learning styles and user engagement.
Conclusions: Piloting with users and experts show SGs offer educationally worthwhile learning experience.
Take-home messages: (1) Key requirements to develop SG based resources; (2) Lessons learned from our development of two SGs.
Acknowledgements: Robin Farr, E-Learning Technologist; Stephen Haselden, MB ChB.

7BB/12
Content retention of hematopathologic findings is similar after direct inspection by microscope versus projected images: a prospective, randomized crossover study of Mayo Clinic medical students

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Background: Hematology education for the undergraduate medical learner has moved away from the laboratory, with only 20% of course directors including laboratory sessions, and of those, only 60% included microscopy (Broudy and Hickmann, 2007). This study examines the relative merits of laboratory microscopy versus projected image learning in light of this recent trend.
Summary of work: We conducted a prospective, randomized, crossover study comparing material retention after small group-based review of peripheral blood smears using laboratory and projection methods. Students were assigned into two arms. Students completed a multiple-choice quiz before and after each teaching session for evaluation.
Summary of results: Twenty-one students were assigned to each arm of the study. Analysis of the crossover design demonstrated no evidence of a carryover effect (P = 0.2822). There was no significant difference in pre-test and post-test scores between the two teaching methods (rank-sum P = 0.4245). Score improved for all students regardless of teaching method. A majority of students (76%) favored the projection method.
Conclusions: Laboratory microscopy and projected image learning resulted in similar performance with content-related testing. Students preferred projected images overall, albeit a significant minority favored a combined approach.
Take-home messages: Microscopy and projected images are both effective learning tools. Students prefer projected images for perceived increased retention of information.

7BB/13
Strategies employed in one-on-one tuition to improve medical students' ability to calculate doses

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Background: We found individual tuition improved calculating skills among medical students not yet competent after group teaching. We characterized features of these interactions.

Summary of work: Individual tuition was offered to 23 students (from 224) before the start of the 4th year. They comprised 10 of the weakest and 13 randomly sampled students. After giving written consent, each attempted dosage calculations previously answered incorrectly. If they faltered, they were given just sufficient assistance to continue, the help provided being noted. Interview transcripts were analyzed using QSR NVivo 8.

Summary of results: For both groups, drawing diagrams describing problems was the most frequently used strategy. Students also used this most often in subsequent problems. Students were also offered strategies to avoid careless mistakes and told to check for sensible answers. The commonest of four additional approaches, offered to the mixed ability students only, involved techniques to convert units. The weak students were offered an additional seven strategies, five of which were offered only once.

Conclusions: Several strategies used in individual teaching assisted most students and suit inclusion into group teaching. Weak students are better served by the varied strategies of individual tuition.

Take-home messages: One-on-one tuition generates uniquely individualised strategies, providing valuable remediation for the weakest students.

7BB/14
Relative Efficacy of various Learning and Teaching modalities in an undergraduate integrated medical curriculum

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Background: Current methods of learning and teaching challenge the wisdom of traditional pedagogic practice of passive lectures, by stressing need for learner to play an active role in constructing knowledge and developing a practical approach. We evaluated PBL, SGD, lecture and self study as learning modalities and identified their preferred contribution.

Summary of work: In a cross-sectional study, 100 4th year MBBS students and 50 faculty Members were requested to complete a specially designed 10 Item questionnaire. Strategies defined in questionnaire rest on different levels for the six categories of cognition in Bloom's learning taxonomy. Responses were analyzed.

Summary of results: Students evaluated PBL maximally in developing a practical problem solving approach and critical thinking by compelling brainstorming. SGD was considered for easy retention and recall in viva. Lectures were considered best to impart much knowledge and were graded high with respect to examination. Teachers also had similar perceptions, but PBLs and SGDs was rated higher than lectures and self studies. Students and teachers voted each strategy for a major portion in curriculum; SGDs 36% and 20%, lectures 33% and 37%, PBLs 21% and 40%, Self Studies 10% and 3% respectively. Comparing these percentages with the already implemented at institute; SGDs 17%, lectures 47%, PBLs 9% and self studies 27%.

Conclusions: PBLs and SGDs are valuable small group activities with interaction. Interactive lectures outshine passive didactic lectures.

Take-home messages: PBLs, SGDs and interactive lectures should constitute an undergraduate integrated medical curriculum.

7BB/15
How medical students conceptualize their 'knowledge': Exploring 'threshold concepts' and cognitive development

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Background: Tomorrow's Doctors (2009) implicitly encouraged better ways of 'knowing' (e.g. students should: "Acquire, assess, apply and integrate new knowledge, learn to adapt to changing circumstances..."), but the literature appears relatively scanty on medical students' personal epistemology, particularly for 'tricky' concepts. 'Threshold concepts' about 'the big picture' are, however, likely in population health.

Summary of work: Aim: To explore medical students' cognitive development around how they describe their knowledge, specifically threshold concepts. Setting: Liverpool problem-based curriculum. Participants: A cohort of ~122 medical students (mostly end-Year 5) responded. Method: A questionnaire included: Entwistle learning approaches, Moore's Cognitive Complexity Index (CCI), and an open-ended item to describe a Population Perspective concept that responders found 'tricky' (and why). Year 1 cognitive development and their descriptions of their knowledge-base were available for a subset (n~40).

Summary of results: Some responders focused on external factors affecting their knowing, but some did indeed articulate potential threshold concepts. Links with cognitive development and learning approaches are highlighted. In longitudinal data, cognitive development changed little between Year 1 and end-Year 5, and related to knowledge descriptions.

Conclusions: Medical students' personal epistemology is a relevant consideration in whether they 'get' certain transformational topics.

Take-home messages: To support better ways of 'knowing', appreciating medical students' 'troublesome knowledge' merits further exploration.

7BB/16
Using teaching case to integrate pediatrics, pediatric semiology, theory, practice and assessment

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Background: The modular, integrated curriculum of our medical school has been in force since 2006. The plan's educational course emphasizes the integration of multidisciplinary content, theory, practice and research. Adjustments are needed and to address innovative strategies in professional cycle and make lessons more interactive, we decided to use teaching cases.
Summary of work: This paper proposes to demonstrate the use of teaching cases to illustrate pediatrics classes and pediatric semiology. Throughout the semester, five teaching cases were applied from a blueprint based on educational goals, for third year students of medical course.
Summary of results: Twenty students, 54,0% males and 46,0% females, average age 20, were submitted to the teaching cases for six consecutive periods, being monitored by the professor with assessment and feedback. All students adapted and liked the method, often developed greater interest and knowledge about pediatric issues and greater group involvement. Several students reported that they had read other articles, studied more regularly and understood issues better.
Conclusions: The methodology motivated and involved students in the subject and also became a teaching/learning option with active participation of all involved.
Take-home message: The teaching case can be used to illustrate a class or discuss a problem with a view to learning the student face the reality.

7BB/17
Situated learning enhances authenticity of learning experience of Geriatric Assessment Skills among junior medical students

Wee Shiong Lim (*Tan Tock Swng Hospital, Geriatric Medicine, Singapore*)

(Presenter: Wee Shiong Lim, Tan Tock Swng Hospital, Geriatric Medicine, 11 Jalan Tan Tock Seng, 308433, Singapore*)*

Background: Situated learning emphasizes that learning needs to occur in an authentic context. We studied the difficulties experienced by junior medical students when performing four geriatric assessment skills (GAS) in "real" elderly patients: communication, functional assessment (FA), cognitive assessment (CA) and postural blood pressure (PBP).

Summary of work: We studied 99 2nd year students who received bedside GAS teaching after completing Aging Simulation workshops involving students who role-play the scenario. Students indicated which GAS was most difficult and provided reasons why. We employed mixed-methods approach using quantitative (pre-post difference on 7-point Likert scale) and qualitative (thematic analysis of questionnaire) data.
Summary of results: Students appreciated the difficulty performing GAS among frail elderly patients (pre-post difference, mean: 0.38-0.65, all P<.01). Communication (36%) was the most difficult, followed by PBP (33.7%), FA (24.4%) and CA (5.8%). We identified four themes among the reasons: language, technical, harm to patients, and patient factors. Language featured prominently in communication and CA, while technical reasons predominate in FA and PBP.
Conclusions: Patient contact enhances the authenticity of the learning experience of GAS. Different strategies are needed to address the reasons for the difficulties encountered.
Take-home message: Incorporate real elderly patients to highlight practical difficulties of GAS.

7CC e-Posters: Mobile Learning

7CC/1
Is mobile learning a sufficient replacement method for the workshop? The study of effectiveness of mobile learning to faculty in service program

Leili Mosalanejad (*Jahrom University of Medical Sciences, Department of Education, Jahrom, Iran*)
Sedighe Najafipour (*Jahrom University of Medical Sciences, Department of Education, Jahrom, Iran*)

(*Presenter*: **Farzaneh Alipour**, Jahrom University of Medical Sciences, Student Research Committee, Main Campus, Jahrom 74148, Iran)

Background: An M-learning program enables the development and effective use of digital technologies to support learning and teaching in universities and colleges, so that staff benefit from e-learning.
Summary of work: All new faculty members participate in this program. The main program that was sent to faculties was a lesson plan that was taught in two days, includes 10 text messages designed to transform basic information about this content. Data gathering was by questionnaire. Pre test – post test faculty knowledge was assessed by a valid and reliable questionnaire concluding with 8 multiple choice questions. A study of the effectiveness of this program was conducted by questionnaire about the advantage and disadvantage of this method and was assessed by 10 questions on a 4 point Likert scale.
Summary of results: Results showed that m-learning was effective in promoting faculty knowledge (p= 0.03). Other results showed that the greatest advantages were availability (2/2 ± 0/83), comprehensiveness (2/35± 0/71) and ease of use (2/30 ± 0/73) and satisfaction was also high (2/90± 0/71).
Conclusions: Mobile learning was effective in promoting knowledge and faculty satisfaction was high. We recommend using this method in service training.

7CC/2
WikiLectures - an opened web in medical education

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Background: Electronic learning support is an increasingly important part of tools for medical education.
Summary of work: In order not to fragment knowledge and resources necessary for e-learning, Medical Faculties Network (MEFANET) was established in 2007. All Czech and Slovak medical faculties are joined, today. MEFANET offers three common tools: Official platform for e-publication devoted especially to complex, peer-reviewed works (portal.mefanet.cz); learning management system (moodle.mefanet.cz); and, finally, space for flexible publishing based on Web 2.0, WikiLectures (www.wikiskripta.eu).
Summary of results: With more than 15,000 visits a day, WikiLectures are the most used web for medical education in the Czech and Slovak Republics. The source of this dynamism is, in our opinion, great openness. Anybody may contribute. Technical demands are diminished to minimum. Cooperation of authors is facilitated, making the use of limited resources (experts, funds) more effective. Students play an indispensable role. They work as technical editors and also contribute to writing new articles in a great deal. Time and effort of busy teachers is saved, allowing them to better guarantee accuracy and adequacy.
Conclusions: Opened approach facilitates cooperation and communication. Involvement of students and giving feedback to teachers are stimulated.
Take-home messages: Opened systems in education bring great dynamism, facilitate cooperation, increase involvement of students, and stimulate communication.

7CC/3
Development of an innovative mobile web application for WPBAs in Foundation Training in the North Western Deanery, UK

G Tack (*NHS North West, Junior Doctor Advisory Team, Manchester, United Kingdom*)
D Powley (*North Western Deanery, IT, Manchester, United Kingdom*)
C Harrison (*North Western Deanery, IT, Manchester, United Kingdom*)
J Miles (*North Western Deanery, United Kingdom*)
P Luthra (*North Western Deanery, Manchester, United Kingdom*)
P Baker (*North Western Deanery, Manchester, United Kingdom*)

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Background: We have developed an innovative, free and user-friendly mobile web application for our Foundation e-portfolio; designed to help support trainees and supervisors complete WPBAs within the daily time and resource constraints of clinical practice.
Summary of work: The interface was built using the jQuery© mobile framework and supported a number of devices including iPhone, Android Blackberry and Windows Phone 7. Three WPBAs were developed: Case-based discussion (CbD), Direct Observed Procedural skills (DOPs) and mini-Clinical Evaluation Exercise (mini-CEX).
Summary of results: Since August 2011, 179 WPBAs have been completed via the mobile technology, 55% DOPS. Top ten users account for 31% of the activity and overall feedback is positive. However, less than 5% of supervisors use the option for immediate validation.
Conclusions: Trainees find the mobile application a useful way to access their e-portfolio to complete WPBAs. DOPS is the most popular WPBA completed, which may reflect the opportunistic nature of this assessment. However supervisors do not immediately validate assessments, perhaps because they do not have their login details to hand.
Take-home messages: The mobile web application offers an alternative method of data entry and validation of WPBAs during clinical activity.

7CC/4
Medical Students' use of and Attitudes Towards Medically Related Mobile Phone Applications

Nicole Koehler (*Monash University, Faculty of Medicine, Nursing and Health Sciences, Clayton, Australia*)
Kaihan Yao (*Monash University, Faculty of Medicine, Nursing and Health Sciences, Clayton, Australia*)
Christine McMenamin (*Monash University, Faculty of Medicine, Nursing and Health Sciences, Clayton, Australia*)

(*Presenter:* Nicole Koehler, Monash University, Faculty of Medicine, Nursing and Health Sciences (building 15), Clayton Campus, Wellington Road, Clayton, VIC 3800, Australia, nicole.koehler@monash.edu)

Background: With the emergence of new technology (e.g., medically related mobile phone applications) it is important to establish whether students have access to such new technology and their attitudes towards its use.
Summary of work: The present study examined medical students' ownership of mobile phones with application support, and their use of and attitudes towards medically related mobile phone applications.
Summary of results: A total of 594 Monash University medical students participated in the study in 2011. All participants owned a mobile phone with 77% of them having one with application support. Seventy-six percent of students with mobile phones with application support used medically related applications. Generally students had positive attitudes towards using medically related mobile phone applications. The majority of participants with mobile phones without application support would be prepared to obtain

such a device to enable them to access medically related applications.

Conclusions: Given students' positive attitudes toward medically related mobile phone applications; this study suggests that these devices could play a more significant role within medical education.

Take-home messages: The majority of medical students appear to be ready for and accepting of medically related mobile phone applications to be used during their medical education.

7CC/5
Innovation in Web-Based Texts for Medical Students: The AFMC Primer on Population Health

Denise Donovan (*Université de Sherbrooke, Centre de formation médicale du Nouveau-Brunswick, Sciences de la santé communautaire, Moncton, Canada*)

(*Presenter:* Denise Donovan, Université de Sherbrooke, Centre de Formation médicale du Nouveau-Brunswick, Sciences de la santé communautaire, Pavillon J.-Raymond-Frenette, Université de Moncton, Moncton E1A 3E9, Canada, Denise.Donovan@USherbrooke.ca)

Background: Noting there was no textbook on public health suitable for medical students, the AFMC Public Health Educators' Network (PHEN) collaborated on creating one. It covers the Medical Council of Canada (MCC) public health learning objectives and shows students the relevance of public health to medicine.

Summary of work: The text is in three parts: Thinking about health; Studying health; and Improving health. The first edition (available at afmc-phprimer.ca/ English or afmc-manuelsantedespopulations.ca French) uses several optional text boxes to allow readers flexibility to focus on core material, or to review the material in depth. The text is cross-linked to the MCC learning objectives. It is web-based, in French and English, free of charge, to students and educators all over the world.

Summary of results: Thirty students and academics reviewed the primer during its development. Feedback from users across Canada will contribute to developing the second edition.

Conclusions: More than merely producing a digital textbook, we are working to exploit the full potential of the web. The poster will describe planned improvements to the text and various ways that technology can tailor the text to each reader's requirements

Take-home messages: Primer users may join the Public health community at the Canadian Health Education Commons (http://chec-cesc.afmc.ca/) to comment and continue discussions on population health in medical education.

7CC/6
QR codes, mobile learning and anatomy

Samuel Webster (*Swansea University, College of Medicine, Swansea, United Kingdom*)
Joanna Bishop (*Swansea University, College of Medicine, Swansea, United Kingdom*)

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Background: Highly detailed, coloured, plastic anatomical models are integral to many anatomy teaching curricula, particularly with declining cadaver access and increasing medical student numbers. Models are normally labelled with identifying numbers and are provided with a numbers and terms key. Unfortunately some of the terms have often not translated well or are not clear, and they do not have other teaching aids linked to them. Number sheets can also become worn or misplaced.

Summary of work: To improve labelling accuracy and the learning experience we developed a mobile learning tool that allows a student's handheld device to recognise a model with a 2D (QR) barcode and retrieve HTML pages that link the numbers to structures, provide an introduction, a description of the model and key features, and a quiz. Students may also access this information from a list on a web page.

Summary of results: Students use anatomical models for self directed learning, and in this way are able to use a guided teaching resource at the same time.

Conclusions: The anatomy department is able to use this resource to describe to the user in text or video how a model should be correctly disassembled and reassembled, minimising repair costs.

Take-home messages: Smartphones aid anatomy model self directed learning.

7CC/7
Developing iBooks as part of technology enhanced blended learning approach to skills training

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Sarah Kaufmann (*Leeds Teaching Hospitals NHS Trust, Medical Education, Leeds, United Kingdom*)
Margaret Ward (*Leeds Teaching Hospitals NHS Trust, Medical Education, Leeds, United Kingdom*)
Andrea Fox-Hiley (*Leeds Teaching Hospitals NHS Trust, Medical Education, Leeds, United Kingdom*)
Stuart Haines (*Leeds Teaching Hospitals NHS Trust, Leeds, United Kingdom*)

(*Presenter:* Henry Fuller, Leeds Teaching Hospitals NHS Trust, Medical Education, Ashley Wing, Beckett Street, Leeds LS9 7TF, United Kingdom, henry.fuller@leedsth.nhs.uk)

Background: Following the launch of iBooks author in 2012, Medical Education Leeds is currently developing iBooks for use as part of a blended learning approach to a variety of courses and skills training based on Medical Education Leeds's 'a framework for technology enhanced blended learning'.

Summary of work: The development of iBooks involves streamlining existing content and replacing static images and text with custom created interactive features and video content mapped against out our 'framework for technology enhanced blended learning'.

Summary of results: With reference to specific projects (e.g. the Royal College of Obstetricians and Gynaecologists Basic Practical Skills (BPS) Manual), this presentation will include

user feedback on the iBook version of the manual and a comparison between it and the printed version. We will review the effect of this innovation on the didactic teaching aspects of the course and the benefits of this format to the trainee.

Conclusions: Our conclusions will be based on feedback gathered from the projects referred to in the summary of results.

Take-home messages: iBooks provide a mobile accessible alternative to printed documentation.
Rich media content is integral to creating an engaging product.

7CC/8
RADUCATE: A Multimedia-Based Teaching System for Medical Education on Web and Smart-Devices

Guo Liang Yang (*Agency for Science, Technology and Research, Biomedical Imaging Lab, Singapore*)
Anand Ananthasubramaniam (*Agency for Science, Technology and Research, Biomedical Imaging Lab, Singapore*)
Arumugam Thirunavuukarasuu (*Agency for Science, Technology and Research, Biomedical Imaging Lab, Singapore*)
Wieslaw Lucjan Nowinski (*Agency for Science, Technology and Research, Biomedical Imaging Lab, Singapore*)

(*Presenter:* Guo Liang Yang, Agency for Science, Technology and Research, Biomedical Imaging Lab, 30 Biopolis Street, #07-01 Matrix, Singapore 138671, Singapore, glyang@sbic.a-star.edu.sg)

Background: Although digital content finds widespread use in medical education, efficient multimedia-based teaching systems are still uncommon.

Summary of work: RADUCATE is a web-based system for medical education that allows instructors to capture the teaching process as a multimedia teaching file that can be viewed and explored by students using web browsers and smart devices such as iPad.

Summary of results: Virtual Classroom: RADUCATE simulates face-to-face medical education by using audio and video. Online Recording: A web browser and a microphone suffice to create multimedia-based teaching files with text, image, audio and video. Case Discussion: Medical students discuss teaching cases with audio and video in real-time. Assessment: RADUCATE facilitates an efficient evaluation of students' knowledge. Remote Education: Our patented video technology ensures high image quality and small size of teaching files facilitating an efficient Internet transmission. Mobility: Teaching files can be accessed on the move through dedicated apps on smart-devices.

Conclusions: While instructors can create multimedia teaching files and perform assessment online, students can learn and test their skills easily. The concept of bringing medical learning experience to smart-devices encourages students to learn anytime, anywhere and could maximize their learning potential.

Take-home messages: Multimedia Teaching Files: An innovative method towards effective medical education using web and smart-devices.

7CC/9
Implementation and evaluation of podcasts as an educational tool in undergraduate nursing education

Marie Tarrant (*University of Hong Kong, School of Nursing, Hong Kong*)
Polly S. L. Chan (*University of Hong Kong, School of Nursing, Hong Kong*)

(*Presenter:* Marie Tarrant, University of Hong Kong, School of Nursing, 4/F, William. M. W. Mong Block, Li Ka Shing Faculty of Medicine, 21 Sassoon Road, Hong Kong 00000, Hong Kong, tarrantm@hku.hk)

Background: In the past 20 years both educators and students have witnessed an explosion in the amount and variety of technology used in tertiary education. One of the technologies generating discussion and excitement among academics and students is the use of "podcasts" to supplement and enhance student learning. The purpose of this project was to develop podcasts of course materials and to assess the impact of podcasting on student learning.

Summary of work: We created podcasts of all course lectures and made them available on-line to students. The lecture podcasts were divided into short 20-30 minute sections according to lecture topics. We evaluated students' actual use of the technology, the impact on their learning, and their perceptions about the technology.

Summary of results: 70.2% of all students accessed the podcasts to review specific parts of the lecture (92.9%), to clarify concepts not understood during the lecture (89.8%), to prepare for examinations (80.6%) and to make up for a missed lecture (63.2%). Podcasts enhanced students' learning (84.5%) and the majority of students felt they should be made available for all courses (82.5%).

Conclusions: Podcasting course lectures appears to enhance and augment didactic learning.

Take-home messages: Creating podcasts of lectures and other course sessions may be a valuable tool for students for whom English is not their first language, as is currently the case in many nursing education programs worldwide.

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SESSION 8: Simultaneous Sessions
Tuesday 28 August: 1600-1745

8A Symposium: Preparing Leaders in Health Professions Education

Ara Tekian (*University of Illinois at Chicago, USA*)
Trudie Roberts (*Leeds Institute of Medical Education, United Kingdom*)
John Norcini (*FAIMER, Philadelphia, USA*)
Helen Batty (*University of Toronto, Canada*)
David Cook (*Mayo Clinic, Minnesota, USA*)

Preparing leaders in health professions education (HPE) has been a high priority for many institutions worldwide. Up till 1996, there were only 7 masters-level programs in HPE,

however, by 2011 that number increased to 76. During this interactive symposium, we will present the context for this increased demand, analyse the commonalities and the differences among such programs, examine the need and outcome of master's programs in HPE, and diagnose the reasons of the geographic maldistribution. We will also consider how such programs enable graduates to become leaders and scholars in HPE.

8B Symposium: Is it the job or the person: Controversy in how best to respond to the high prevalence of distress amongst physicians in training and in practice

Reidar Tyssen *(University of Oslo, Norway)*
Lotte Dyrbye *(Mayo Clinic, USA)*
Marie Dahlin *(Karolinska Institutet, Sweden)*
Jelle Prinse *(Dutch Doctors' Association, The Netherlands)*
Edgar Voltmer *(Friendensau Adventist University, Germany)*

After a brief review of the prevalence and trends of distress across the continuum from medical school to physician training and practice, different perspectives will be presented as to what are the primary factors contributing to the high prevalence of distress. An interactive discussion will follow where attendees will discuss the value of the following approaches to address the high burden of physician distress: 1) Applicant screening, 2) Self-help curriculum, and 3) Organizational/curricular change.

8C AMEE Fringe 2

8C/1
Madeline's Appendix

Maria Bachman *(Mayo Clinic, Mayo Medical School, Rochester, United States*)
Kashmira Chawla *(Mayo Clinic, Mayo Medical School, Rochester, United States)*
Trahern Jones (*Mayo Clinic, Mayo Medical School, Rochester, United States)*
Lindsey Roeker *(Mayo Clinic, Mayo Medical School, Rochester, United States)*
James Newman *(Mayo Clinic, Internal Medicine, Rochester, United States)*

(Presenter: Maria Bachman, Mayo Clinic, Mayo Medical School, 1320 Skyline Dr SW, Rochester MN, United States, bachman.maria@mayo.edu)

There are many ways to study medicine. There is clinical experience, on-line resources, weighty tomes and evidence laden journals. Ands there are children's books. In this project, students from the Mayo Medical School during a selective period, set off an a journey of discovery, their favorite classic childhood storybook in hand. With favorites such as Madeline, Curious George, and the Velveteen Rabbit as a reference point, students investigated the historic context and modern treatment of diseases in these stories,

specifically appendicitis, swallowed foreign objects and scarlet fever. The group concluded that approaching medicine from this nontraditional angle was an intellectually stimulating way to learn and an excellent supplement to didactic education. Plus it was fun.

8C/2
The Digital Prof – teaching and tweeting while evading online offences

David Topps *(University of Calgary, Family Medicine, Calgary, Canada*)
Maureen Topps *(University of Calgary, Family Medicine, Calgary, Canada)*
Janet Tworek (*Denver, United States)*
Doug Myhre *(University of Calgary, Family Medicine, Calgary, Canada)*

(Presenter: David Topps, University of Calgary, Family Medicine, 2808 11 Ave NW, Calgary T2N 1H9, Canada, topps@ucalgary.ca)

Facebook faux pas, password perils, antisocial networking, plagiaristic pitfalls – the variety of ways to get into trouble as a digital professional increases every day. Mainstream medicine attempts to regulate these misbehaviours but most miscreants are either unwitting or just dim witting. The solution is education, not regulation. We take a humorous look at how to survive in the online world as a clinician and human being. Building on previous Fringe experience, this year's session will feature a variety of novel audience interaction approaches, including live audience feedback (Tweet about our travails! #FringeDP), games and flying rocks!

8C/3
Using improvisation to improve realism in simulation

Katie Walker *(New York Health & Hospitals Corporation, Institute for Medical Simulation & Advanced Learning, New York, United States*)
Debra Nestel *(Monash, Gippsland Victoria, Monash Medical School, Melbourne, Australia)*
Walter Eppich (*Children's Memorial Hospital , Emergency Dept, Chicago, United States)*
Cathy Smith *(University of Toronto, 78 Badgerow Ave, Toronto ON, M4M 1V4, Department of Family and Community Medicine, Toronto, Canada)*

(Presenter: Katie Walker, New York Health & Hospitals Corporation , Institute for Medical Simulation & Advanced Learning, 150 East 44th St Apt 46F, New York 10017, United States, katie.walker@nychhc.org)

This session will be an interactive exploration of the principles from theatre to create realism in simulation environments. The presenters will provide an environment where participants will gain the skills to improve the impact, realism, and quality of simulations by learning and practicing basic improvisation techniques. Improvisation techniques provide a lively yet rigorous way for actors to quickly orient, interact, and adjust to learner's actions in the course of a simulation. The session includes demonstrations, exercises and practice

applying the techniques learned. Participants will leave with exercises they can use to teach the techniques to their colleagues, as well as guidelines and tools they can use in their own simulations. The session is underpinned by the improv tool of "making an offer". This requires that when a participant enters a simulation experience, they are immediately told who they are, who the person introducing them to the scenario is, what the situation is and what the clinical environment is. Dieckmann, 2008, says that clarifying these expectations and getting the 'small details' right makes it easier for the participants to enter into the 'fiction agreement'. Teaching all members of the simulation staff these principles improves the teamwork.

8C/4
The clinical placement: A folk tale featuring an orthopaedic surgeon and a rabbit (and a ukulele, of course)

Donald Bramwell (*Flinders University, Orthopaedics, Adelaide, Australia*)

(*Presenter:* Donald Bramwell, Flinders University, Orthopaedics, 5A-153, Flinders Medical Centre, Bedford Park SA 5042, Australia, donald.bramwell@flinders.edu.au)

Here is the understandably unexplored link between African folk tales and placement programs which enable students on short rotations in a metropolitan hospital to play a meaningful role within the clinical demands on preceptors and the host department.
As is traditional, a rabbit is involved (Tracey, 1985). As is essential, a ukulele will be played. It is possible to increase student involvement in the patient care team (Bramwell, 2009) through developing explicit guidelines for students, with a clear role in theatre and in team discussions and thus overcome some disadvantages of piecemeal rotations (Holmboe, Ginsburg & Bernabeo, 2011). Prideaux, Worley and Bligh (2007) have elucidated the benefits to students, clinicians and the health system from placements which promote symbiotic relationships. Where's the lion?
Bramwell D 2009. Longitudinal patient contact for final year medical students on clinical placement in orthopaedics, Presentation at AMEE Annual conference, Malaga
Holmboe E, Ginsburg S & Bernabeo E 2011. The rotational approach to medical education: time to confront our assumptions? Medical Education, 45: 69-80
Prideaux D, Worley P, Bligh J 2007. Symbiosis: a new model for clinical education. Clinical Teacher, 4: 209-212
Tracey, H 1985. The Lion on the Path, International Library of African Music, Grahamstown

8D Communications courtes (en français): Évaluation curriculaire

8D/1
Quels Sont les Facteurs Predictifs d'etre Reçu Dansles 500 Premiers a l'examen Classant National (Ecn)? Une Etude Transversale au Sein des Etudiants en Medecine de la Promotion 2009

Laurent Karila (*Université Paris XI, faculté de médecine Paris Sud, Assistance Publique–Hôpitaux de Paris (AP-HP), hôpital Paul-Brousse, Département d'Addictologie, CEA INSERM U1000, Addictologie, Villejuif, France*)
Elise Seringe (*Université Paris VI, faculté de médecine Pierre-et-Marie-Curie, Assistance Publique–Hôpitaux de Paris (AP–HP), hôpital Pitié-Salpêtrière, service de Santé publique, Santé Publique, Paris, France*)
Xavier Deffieux (*Université Paris XI, faculté de médecine Paris Sud, Assistance Publique–Hôpitaux de Paris (AP–HP), hôpital Antoine Béclère, Service de Gynécologie Obstétrique, Gynécologie Obstétrique, Clamart, France*)
Morgan Roupret (*Université Paris VI, faculté de médecine Pierre-et-Marie-Curie, Assistance Publique–Hôpitaux de Paris (AP–HP), hôpital Pitié-Salpêtrière, service d'Urologie, Paris, France*)
Lefevre Jérémie (*Chirurgie Viscérale, Paris, France*)

(*présentateur:* Laurent Karila, Université Paris XI, faculté de médecine Paris Sud, Assistance Publique–Hôpitaux de Paris (AP–HP), hôpital Paul-Brousse, Département d'Addictologie, CEA INSERM U1000, Addictologie, 12 avenue Paul Vaillant Couturier, Villejuif 94250, France, laurent.karila@pbr.aphp.fr)

Contexte: Analyser de manière transversale les facteurs sociodémographiques et pédagogiques prédictifs d'être classés dans les 500 premiers étudiants de médecine à l'Examen Classant National (ECN) en 2009.
Résumé des travaux: En septembre 2009, 5570 étudiants, ayant choisi leur poste/subdivision, ont été invités à répondre à un questionnaire sociodémographique et de pédagogie médicale. Une régression logistique a été réalisée
Résumé des résultats: 4712 étudiants ayant répondu au questionnaire. L'âge moyen au moment du choix était de 24,7 ans (SD 1,79). En analyse multivariée, les facteurs indépendamment associés à un classement dans les 500 premiers à l'ECN étaient l'âge inférieur à 25 ans (OR :1,8 - IC95% : 1,3-2,5 – p<0,001), l'interrégion d'origine (OR : 3,7 - IC95% : 2,3-5,8 – p<0,0001), avoir eu le concours primant en PCEM1 (OR :1,7 - IC95% : 1,2-2,4 – p<0,001), être classé dans les 20 % de sa promotion (p<0,0001), l'enseignement de la LCA par les chefs de clinique (OR :1,5 - IC95% : 1,05-2,1 – p<0,001)), faire des examens blancs comportant cette épreuve (OR :1,96 - IC95% : 1,3-3,03 – p =0,002).
Conclusions: La transversalisation de l'enseignement du DCEM et l'ECN obligatoire pour tous les étudiants de médecine n'ont changé en rien les stratégies d'apprentissage et d'entraînement nécessaires pour être classé dans les 500 premiers même avec l'ajout de l'épreuve de LCA.
Messages à retenir: Aucun changement dans les stratégies d'apprentissage et d'entrainement chez les 500 premiers à l'ECN

8D/2
L'évaluation de la qualité d'un programme de formation universitaire : élaboration d'un modèle de référence guidant le développement d'outils de suivi.

Hélène Moffet (*Université Laval, Réadaptation, Faculté de médecine, Québec, Canada*)
Louise Arsenault (*Université Laval, Vice-décanat à la pédagogie et au développement professionnel continu, Faculté de médecine, Québec, Canada*)

Isabelle Savard (*Université Laval, Vice-décanat à la pédagogie et au développement professionnel continu, Faculté de médecine, Québec, Canada*)
Francine Dumas *(Université Laval, Réadaptation, Faculté de médecine, Québec, Canada)*
Cyril Schneider *(Université Laval, Réadaptation, Faculté de médecine, Québec, Canada)*

(présentateur: Hélène Moffet, Université Laval, Réadaptation, Faculté de médecine, Pavillon Ferdinand-Vandry, 1050 avenue de la Médecine, Québec (Québec) G1V 0A6, Canada, Helene.Moffet@rea.ulaval.ca)

Contexte: Un nouveau programme de formation universitaire en physiothérapie d'une durée de quatre ans et demie a été mis en place en septembre 2008. La qualité de ce nouveau programme doit être démontrée aux instances institutionnelles et externes dont celle de l'agrément de l'enseignement de la physiothérapie au Canada.
Résumé des travaux: La planification de l'évaluation de la qualité de ce nouveau programme a mené à l'élaboration d'un modèle de mise en œuvre et d'évaluation inspiré du modèle logique.
Résumé des résultats: La phase de mise en œuvre illustre le programme planifié (2003-2007) et vécu (2008-2012) de même que la dynamique d'amélioration continue du programme. L'évaluation s'appuie sur quatre critères (pertinence, cohérence, efficacité et dynamisme) pour lesquels des indicateurs ont été identifiés à court terme (mesure de résultats) et à plus long terme (mesures d'impact). Les moyens et sources d'information qui constituent des preuves de la qualité du programme ont été détaillés.
Conclusions: La première étape concernant l'élaboration de notre modèle d'évaluation est complétée. Les résultats d'un premier cycle d'évaluation permettront de poursuivre la validation de ce modèle et d'en confirmer la pertinence.
Messages à retenir: L'élaboration d'un modèle d'évaluation d'un programme de formation universitaire soutient le développement d'outils adaptés et l'identification d'indicateurs pertinents au suivi de sa qualité.

8D/3
La prévention des dérives curriculaires : l'analyse systémique d'un programme de médecine

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Contexte: Au cours des dernières années, plusieurs influences ont contribué à modifier le visage du programme de médecine de l'Université de Sherbrooke. Devant la complexité d'un curriculum en changement, il devient nécessaire de prendre du recul pour dépister les facteurs en cause, mais également les patrons d'action qui interviennent dans la création des dérives curriculaires.
Résumé des travaux: Une recherche s'appuyant sur les fondements de la pensée systémique.
Objectifs :
1) D'identifier les phénomènes d'amplification et de régulation en présence
2) De cibler les patrons d'action associés aux différents éléments de dérives identifiés.
3) D'identifier des pistes de solutions issues des recommandations formulées par les répondants.
Résumé des résultats: Les résultats mettent en évidence une série de patrons d'action visant à promouvoir la croissance ou à régler les problèmes et qui expliquent efficacement certaines dérives par rapport aux orientations initiales du programme de médecine.
Conclusions: À terme, des leviers d'actions seront identifiés et permettront de prévenir ces dérives dans une perspective systémique du programme de médecine.
Messages à retenir: Cause et effet ne sont pas étroitement liés dans le temps et dans l'espace. Ne cherchez pas de leviers pour intervenir sur les symptômes de votre problème. Remontez en amont et dans le temps afin de découvrir les causes fondamentales.

8D/4
Ressenti d'une séance de simulation haute fidélité en anesthésie-réanimation par des internes de spécialité

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Contexte: La simulation haute fidélité se développe en médecine. Si cette méthode semble très intéressante, le ressenti des étudiants reste à préciser. L'objectif de cette enquête était de recueillir le vécu d'une séance de simulation en anesthésie-réanimation par des internes.
Résumé des travaux: Quinze internes ont participé à une séance de simulation. Un questionnaire anonyme était remis en fin de séance, visant à évaluer le vécu de la séance par les internes.
Résumé des résultats: Les sentiments éprouvés avant de débuter la séance associaient angoisse (13/15), peur d'être jugé(e) (11/15), curiosité (10/15) et intérêt (14/15). La séance de simulation était trouvée plus stressante que la réalité pour 1/3, moins stressante pour 1/3, et aussi stressante pour 1/3 des internes. Le jugement potentiel de l'équipe médicale (11/15) ainsi que la peur d'échouer (12/15) représentaient les causes possibles de déstabilisation.
100% jugent l'anesthésie-réanimation propice à la simulation et 13/15 souhaitent travailler sur des situations rares ET sur des situations fréquentes. 100% pensent que la simulation est très efficace sur le plan pédagogique et que ce type d'expérience correspond à leurs attentes, affirmant avoir

appris (13/15) ou révisé (15/15) quelque chose et souhaitant renouveler l'expérience.

Conclusions: Les internes d'anesthésie-réanimation accueillent la simulation haute fidélité de manière très favorable bien que beaucoup d'entre eux admettent un haut niveau de stress.

Messages à retenir: La simulation en anesthésie-réanimation est une technique pédagogique qui séduit les internes en formation.

8D/5
Niveaux de compétence en médecine générale

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Contexte: Sous l'égide du ministère de la santé le « référentiel métier et compétences des Médecins Généralistes » (MG) a été publié en 2009. Il décrit les rôles du MG, les grandes familles de situations de soin du métier et les compétences génériques. Il ne décrit pas les niveaux des compétences à acquérir.
Résumé des travaux: Le groupe national d'experts s'est accordé sur les principaux concepts. A partir de la littérature et des expertises des participants un consensus a été obtenu décrivant précisément le contenu des compétences génériques transversales et leurs composantes. Nous avons recherché des niveaux, en fonction de ce qui apparaissait comme des étapes importantes durant le cursus, en particulier le passage en stage ambulatoire.
Résumé des résultats: : Nous avons décrit 6 compétences génériques transversales leurs capacités constitutives et quatre niveaux ont été décrits : Novice, Intermédiaire, Compétent et Expert, ce dernier ne concernant pas notre recherche. Nous avons précisé comment, en fonction des 3 niveaux, se développait chaque compétence au cours du cursus de médecine générale et nous avons produit des indicateurs de ces niveaux.
Conclusions: : les niveaux de compétence et leurs indicateurs doivent faciliter la production d'instruments d'évaluation authentique des compétences requises pour exercer la Médecine Générale.

8D/6
Dispositif d'évaluation du programme des leaders pédagogiques à la Faculté de médecine de l'Université de Montréal (UdeM)

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Contexte: Le programme des leaders est une stratégie pour implanter l'approche par compétences (APC) à l'UdeM et l'évaluation de ses impacts inclut plusieurs volets en constante évolution dans un milieu fortement diversifié.
Résumé des travaux: Les effets sont mesurés à différents niveaux : leaders eux-mêmes, enseignants, programmes de formation, étudiants et vie pédagogique à la faculté. Considérant les objectifs du programme dont le principal constitue la mobilisation du corps professoral pour faire évoluer les pratiques pédagogiques en cohérence avec l'APC, l'échelle de Kirkpatrick a été sélectionnée
Résumé des résultats: Une difficulté rencontrée a été la documentation des activités existantes dans un temps 0. Les différents outils mis sur pied (groupes de discussion, grilles de mesure de la productivité des leaders, évaluations de l'accompagnement par la direction facultaire) permettent de sonder les résultats des leaders en regard de la performance du programme.
Conclusions: Le dispositif d'évaluation de programme utilise un cadre d'intégration basé sur des données focalisant sur l'intégration des leaders dans les milieux, leurs perceptions, celles des cliniciens-enseignants, des étudiants et de la direction facultaire sur les changements de pratiques pédagogiques du corps professoral.
Messages à retenir: Le dispositif d'évaluation du programme des leaders doit intégrer les dimensions liées à la pratique clinique autant que pédagogique axée sur l'APC.

8E Short Communications: Feedback 1

8E/1
Improving Feedback - Changing a proforma is associated with an increase in the quality and quantity of written feedback provided to medical students

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Background: The provision of adundant, detailed feedback is an essential part of education. A simple change to a feedback proforma was designed to try and produce an increase in the

quantity and quality of feedback provided to students for two transferable skills projects.

Summary of work: Previously, feedback was provided on a blank free-text proforma. The change was to add a pair of short questions aligned to each of the 6 domains of the marking rubric. The questions were 'What was done well?' and 'Changes which would improve the assignment?' The quality and quantity of feedback provided was evaluated before and after the change.

Summary of results: Feedback provided on the structured proforma was deeper and more abundant.

Conclusions: Using a slightly more structured, directed proforma may result in an increase in the abundance and depth of written feedback, although research (rather than evaluation) would be required to prove that the change caused the improvements.

Take-home messages: Changing the structure of a proforma is associated with an increase in the quality and quantity of written feedback provided to medical students.

8E/2
Audio-feedback: Student Experiences Across Courses and Contexts

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Background: This project evaluated the implementation of an audio-feedback tool across different courses and contexts within a veterinary programme.

Summary of work: An audio-feedback tool was developed and embedded within a virtual learning environment. The tool was utilised to give feedback to students on two courses in different years of a veterinary curriculum. Students were surveyed after receiving the feedback. Qualitative and quantitative methodologies were used to analyse survey data.

Summary of results: Students were very positive about their experiences with audio-feedback and rated it significantly more useful than either a whole class review session or text based feedback (p<0.001). They did not rate it as highly as individual discussion with a member of staff. Several major themes were identified in the qualitative data including: the personal nature of the feedback, quantity of feedback, and a broad theme encompassing comments relating to confidence, encouragement and motivation.

Conclusions: Students value audio-feedback because of its personal and individual nature. There is potential for audio-feedback to enhance the student experience beyond the specific course context.

Take-home messages: This study confirms the potential for audio-feedback as a practical and qualitatively valuable alternative to more traditional forms of feedback.

8E/3
Teaching and assessing - How does it fit together?

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Background: Virtual patient cases (VP) have been used for over a decade worldwide to complement medical student learning in the clinical environment. More recently, case-based assessment using a key features approach has also gained interest among educators. However, the direct connection between what is taught within the VPs and what is assessed is often neglected and rarely formally documented.

Summary of work: We developed a concept for an electronic tool that allows for a direct connection between learning objectives, case content and assessment content. This documentation allows for automatic and specific feedback to the student following completion of an exam. In addition to their exam score, students are provided with error-driven suggestions for learning resources that should be repeated in order to strengthen their knowledge foundation. This kind of documentation allows automatic specific feedback to the students after completing an exam. Not only do they get their score, but also in case they made mistakes, they get feedback about which learning resources they could repeat to deepen their knowledge in these areas.

Summary of results: We will present this concept using the MedU virtual patient cases developed within the CASUS learning system. This concept may be broadly applied to a variety of learning and assessment modalities.

8E/4
Exploring the value of feedback in medical education: how students perceive and respond to the feedback provided in the Mini-CEX

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Background: The Mini Clinical Evaluation Exercise (Mini-CEX) is designed to provide students with immediate feedback. However, in real practice, good quality feedback is not always provided, and this may lessen the value of the Exercise as a learning tool. The current study is aimed to examine the perceptions of students on feedback provided in Mini-CEX and to describe how they respond.

Summary of work: A questionnaire was developed seeking students' views on the type and quality of feedback, and their intentions to utilize the feedback. It was administered to final year medical students in a large Australian medical school at the end of the final term.

Summary of results: The results from 316 respondents demonstrate that the feedback they received is mostly in the form of recommendations, which is the most basic level of feedback. Furthermore, the findings also indicate that students are not prepared to properly respond to and making use of feedback.

Conclusions: The lack of a more advanced level of feedback within Mini-CEX and the finding that medical students may not be able to effectively learn from the feedback warrant further attention from medical educators.

Take-home messages: To optimize the value of feedback, both teachers and students need to be trained in delivering and responding to feedback.

8E/5
Qualitative study of attitudes and perceptions of medical students towards Multi-Source Feedback (MSF)

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Background: Multi source feedback is increasingly being incorporated in U.K. Medical School's curriculum to assess student's professional and interpersonal skills. Keele Medical School introduced its new curriculum in 2007 in which MSF became an essential component of the student's portfolio from year one.

Summary of work: We used convenience and snowball sampling to recruit participants from 130 year 2 Keele Medical students. We conducted one to one interviews with 9 participants using an open ended and semi-structured format. The interviews were tape-recorded, fully transcribed and the transcripts were theme analysed by the main researcher.

Summary of results: 8 out of 9 participants had no previous experience of MSF. The analysis showed a recurring theme echoed by students who felt that the process wasn't explained to them in detail.

All participants felt that MSF was an important aspect of a Doctor's assessment but some didn't think it was particularly useful in year 1. Four students felt that choosing a friend to give feedback made it less reliable.

Conclusions: The study suggests that the process could be made more beneficial to the students if they are explained how it can help them in developing positive professional and personal behaviour.

Take-home messages: Further research on the views and experiences of tutors as well as students is needed to make the process more effective for medical students.

8E/6
Critical reflection: lessons learned from a communication skills OSCE

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Background: Critical reflection, a skill necessary for life-long learning, requires self-assessment informed by external feedback to develop a plan for improvement.

Summary of work: A communication skills OSCE was introduced to the Georgetown University medical student class (control group = 143), and a subset of 47 students viewed a recording of their OSCE encounter, completed a self-assessment and received faculty and standardized patient (SP) feedback.

Summary of results: Baseline performance was similar between intervention and control groups in the overall SP mean scores (p = 0.71). Post-intervention scores were similar (p = 0.66). In a post hoc analysis, we found students were more critical of their own performances compared to evaluations provided by SPs or faculty, specifically with regards to starting and ending the interview.

Conclusions: We infer that students did not improve for two main reasons. First, students had limited opportunities to practice their skills. More importantly, students received no instruction for critical reflection. Our study incorporated self-assessment and faculty feedback, but did not include an improvement plan based on feedback.

Take-home messages: Defining and implementing an improvement plan based on feedback is an essential part of the critical reflection process that, as educators, we cannot assume occurs without explicit guidance.

8E/7
Feedback, personality, and academic performance

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Background: Many courses routinely monitor student satisfaction with feedback and seek to improve it so as to improve competence. However, little is known about the strength of the association between feedback satisfaction and performance.

Summary of work: 240 students from the first, third and fifth year of a medical degree answered questions on their personality, satisfaction with feedback and the importance of

feedback. These were combined with academic records reporting their assessment scores.

Summary of results: Performance, feedback satisfaction, and ratings of the importance of feedback were not significantly associated with each other. Feedback satisfaction and ratings of the importance of feedback were strongly associated with personality traits (extraversion, agreeableness and intellect/imagination). Poorly performing students were less likely to answer the questionnaire.

Conclusions: Satisfaction with feedback is not associated with academic performance, so improving the former should not be assumed to improve the latter. Feedback satisfaction and rating of importance is heavily influenced by personality and this should be kept in mind when interpreting attitudes to feedback.

Take-home messages: Most academic courses monitor student satisfaction with feedback. However very dissatisfied students are no more or less likely to be competent than very satisfied students. Better methods for assessing the impact of feedback in medical degrees are needed.

8E/8
Room for improvement - Learner and faculty perspectives on feedback and assessment

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Background: The problems with feedback and assessment in Pediatrics, University of Manitoba are mirrored in the literature including: • insufficient/ ineffective feedback; • lack of/ incomplete data collection; • fragmented/ incomplete assessments; • avoidance of communicating negative messages; • a need for faculty development on effective feedback. While these issues have been well documented in the literature, few have looked at the perspectives of multiple stakeholders. Our purpose was to determine the perceptions of medical students, pediatric residents and faculty regarding the effectiveness and efficiency of our feedback and assessment system.

Summary of work: Through focus groups/interviews or surveys (students only), perceptions about the assessment process were obtained. A grounded theory approach to data analysis was utilized. Themes were identified using a constant comparative method. Survey and focus group data were examined for triangulation and results were reviewed with selected participants, methods used to establish the trustworthiness of qualitative analysis.

Summary of results: The experiences described echo the perspectives found in the literature as outlined above. Other themes included: • factors affecting receptivity to feedback including learner-preceptor relationships, self-assessment's congruence with feedback and perceived validity of feedback; • need for learner development regarding effective feedback skills.

Conclusions: Rich narrative has been provided to illuminate the qualities of effective feedback and provided impetus for the further curriculum review and development of educational programs to teach learners effective feedback skills.

Take-home messages: Stakeholder (learners and faculty) perspectives have contributed to the development of an enhanced feedback/assessment process.

8F PhD Reports 2

8F/1
Deep learning with virtual patients: The interplay of complex socio-cultural dynamics and emerging learning analytics in understanding technology-enabled learning

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Introduction: Positivist research on virtual patients (VPs) focuses on knowledge-based outcomes and self-reported satisfaction ratings, which presents a narrow perspective of learning with technology. Such approaches belie learning as a complex, socio-cultural process, and overlook that innovations in education are fundamentally long-term undertakings requiring iterative feedback and design (Bereiter, 2002). The doctoral research asked: "What learning takes place with VPs?", and considered this question using three lenses: Learning with VPs as a socio-cultural activity (Vygotsky 1978); VPs and learning as intertwined, iteratively developed processes (Bereiter 2002); and VPs as a web-based tool to measure depth and extent of learning as measured by learning analytics.

Methods: Students in the final year of clerkship (n=180) used VPs in a longitudinal course dedicated to simulation as a means to improving diagnostic reasoning. Students' feedback was iteratively gathered over a six-month period and incorporated into VP design, as well as the longitudinal course. Data was collected from multiple sources (semi-structured interview, semi-structured focus group, video, screen capture, document analysis, log file analysis, and artifact analysis). Analysis engaged three theoretical frames. Activity theory was used to capture the complex socio-cultural dynamics of learning from VPs as a tool. Design-based research enabled an iterative re-design of VPs while also capturing students' developmental changes in diagnostic reasoning. Learning analytics provided VP usage data towards a model of embedded assessment. Data were analyzed separately then triangulated to build a model of effective design and assessment elements for VPs, which was then related to the complex interactions of VPs and students in learning clinical decision making.

Results: While VPs are considered as tools for education, design and implementation concerns initially prevent students from directly engaging in learning. Navigation, aesthetics, feedback, group organization, and physical space are discussed and related to VP and course design layers. Learner engagement, competitiveness, flow, and alignment to clinical practice will be described for their positive and negative contributions to learning. Developmental arcs of clinical reasoning are influenced by clerks' personal sequences through mandatory rotations as well as their peers

clinical experiences, which in turn influence the perceived utility of VPs for learning. The emerging practice of learning analytics to process student learning was found to be very limiting; alternatives are suggested.

Discussion: VPs and other forms of technology-enabled learning for problem solving are tools being shaped through use as well as shaping the learning. The proposed model importantly elucidates design elements required to align VPs with curriculum and clinical practice, while contributing to a deeper understanding of the development of problem solving skills and enculturation to professional practice that takes place in clerkship. The trend to leverage analytics towards the gamification of learning must be cautiously undertaken and models critically appraised. The complex, intertwined reality of VPs, learners, courses, and curriculum presents a rich tapestry of learning that challenges existing research while extending directions for future design and development.

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8F/2
Virtual Ward: An authentic approach to understanding the clinical reasoning process

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Introduction: Patient safety incidents due to clinical reasoning errors in hospitals remain high, despite current training approaches. The aim of this research was to explore usefulness and usability of Virtual Ward, a web-based technology, which creates multimedia virtual patients (VPs), to identify the clinical reasoning process of medical students and doctors.

Virtual Ward creates authentic VPs, which simulate real-life clinical scenarios, providing learners with the opportunity to perform a clinical enquiry (with history-taking, clinical examination, investigations and management). The Virtual Ward approach involves participants completing a VP clinical enquiry alongside a facilitator who asks probing questions about the reasoning process.

A conceptual model for clinical reasoning was formulated from relevant theories in the literature. The research question was "What is the usefulness and usability of Virtual Ward for identifying clinical reasoning processes?" Ethical approval was obtained from the University of Leicester.

Methods: 24 students in year 5 of the Leicester MBChB curriculum ('novices') and 6 doctors ('experts') participated in the study. A pragmatist perspective using mixed-methods (Creswell J, 2007) was used to answer the research question. In-depth interviews were conducted using the Virtual Ward approach to identify clinical reasoning process to produce a cognitive map (Cropper S, 1990) using microanalysis. The cognitive maps were validated by participants after the interviews and then analysed to evaluate the strategies, self-regulation processes and errors associated with clinical reasoning. Participant perceptions about the usability of Virtual Ward technology were also explored at the end of the interviews.

Results: All participants recognised the key features of the clinical presentation by the end of the history-taking stage, but alternated their reasoning process between analytical and non-analytical strategies through the clinical enquiry. Novices and experts focused on outcome-based goals (i.e. formulating a diagnosis or management plan), rather than the actual process/technique of clinical reasoning for doing so at each stage of the clinical enquiry. The mean number of errors was 45 (SD=24) amongst 'novices' and 35 (SD=25) amongst 'experts', but this difference was not significant (t=0.85, P = 0.40 p>0.05). The most frequently identified error was over- or under-estimating the salience of clinical information, accounting for one in every four errors. All 'novices' perceived the experience useful for their learning and valued the structured feedback from the facilitator. All 'experts' commented on the constraints of performing clinical reasoning without the use of 'touch' or a general 'look over' the patient.

Discussion: The Virtual Ward VPs may be used by clinical teachers to create an authentic situation for identifying the strategies and self-regulation processes associated with clinical reasoning. The Virtual Ward approach may also be useful for identifying clinical reasoning processes which characterise common medical errors. The usefulness of the Virtual Ward approach may be limited with the advanced levels of clinical reasoning ability due to the expertise-reverse effect. Further research is necessary to establish whether findings derived from the Virtual Ward approach correlate with actual clinical reasoning errors observed in practice. Further research is also necessary to determine whether Virtual Ward can be used to provide structured identification and training to improve clinical reasoning ability amongst novices.

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8F/3
Introducing and validating the Simulated Teamwork Assessment Scale (SiTAS): Development, Scale Properties and Construct validation

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Introduction: To verify the improvement in Simulation-based teamwork trainings, proper construct valid, reliable and economic instruments are needed (1). We would like to introduce the Simulated Teamwork Assessment Scale (SiTAS) as an observational measurement instrument for this purpose. In study 1 we investigated the research question: Is it possible to reliably measure medical teamwork in short, simulated scenarios? One way to assess the construct validity of a measurement is to compare expert and novice scores. Expert raters´ scores should be more consistent than the scores of novice raters, thus allowing for a robust assessment. As teamwork processes shape clinical performance, another way to assess their construct validity is to relate teamwork ratings to clinical performance. Although ward-rounds are complex tasks, the roles, objectives, and activities of each member and their typical sequence and interplay are accessible and can be defined as a script (2). The fulfilment of this specific script in a ward-round is considered as a valid indicator of clinical performance.
In study 2 we investigated two research questions to verify construct validity of SiTAS:
1. Are expert raters more homogeneous in their scoring of teamwork behaviours using SiTAS than novice raters?
2. Is there a significant relationship between expert ratings of SiTAS and clinical performance (as indicated by scripts) in ward-round scenarios?
Methods: Study 1: Twenty-one teams with three to four members (69 students) participated in the study. They participated in one ward-round scenario. All scenarios were videotaped and rated by trained raters using a preliminary SiTAS scale. The scale properties and factorial structure of the SiTAS were analysed.
Study 2: 100 students (Mean age=23.1, f=62%, m=38%) participated. Twenty-five teams, each consisting of four members, acted out one ward-round scenario. All scenarios were videotaped and rated with the SiTAS by two independent expert and two novice raters. Furthermore, the clinical performance was analysed using a specific coding scheme for ward-round scripts.
Results: Study 1: The explanatory factor analysis yielded three factors. Three items had to be eliminated. The resulting 14-item scale shows good internal consistency (Cronbachs α= .754) with the subscales keyed Team Coordination (Cronbachs α = .813), Team Leadership and Cooperation (Cronbachs α= .763), and Team Adjustment Behaviours (Cronbachs α= .673).
Study 2: In the expert condition Cronbachs α for the SiTAS was good (α= .780). Significant correlations were obtained between all three subscales and the clinical performance (r=.52 – r=.59) as well as between the total score and clinical performance (r=.64). In the novice condition no subsequent significant correlation was found. The mean inconsistencies in measurement were 1% in the expert condition and 10% in the novice condition.
Discussion: The SiTAS shows adequate reliability properties and construct validity as assessed with clinical performance in ward round scenarios as well as consistency in scoring by experts versus novices. Consequently, new short simulated medical teamwork scenarios can use SiTAS to study teamwork scenarios and gather further data for validation of the instrument. Better understanding the improvement of clinical performance in teams analysed as script information are considered a promising direction for future research.

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8F/4
Climbing the pyramid: towards understanding performance assessment

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Introduction: Recent developments in assessment of health care professions education are characterized by an increasing emphasis on assessment of performance in the workplace, stimulated by widespread implementation of competency-based curricula; increasing demands for physician accountability and concerns about health care quality. Work-based assessment (WBA) typically aims to serve both formative and summative assessment purposes. Weaknesses in nature of rater judgments, questionable psychometric performance and implementation difficulties, however, give rise to concerns about the utility of WBA and assessment outcomes, thereby limiting its use in educational and professional settings1. In order to further our understanding of how to improve WBA practices, this thesis addresses the following main research questions:
1) What are preconditions for WBA to become an effective tool for learning as well as summative decision making?
2) What are factors influencing assessment outcomes in real-life settings?
3) What are (cognitive) processes underlying rater judgments in work-based assessments?
Methods: Focus group interviews amongst students were used to illuminate factors influencing effectiveness and utility of a systematic, (semi-)structured approach towards WBA, integrating formative and summative assessment purposes. A literature review across various professional domains, including human resource management, industrial and organizational psychology, and education for the professions resulted in a comprehensive overview of factors influencing raters' behaviours in WBA – and thus assessment outcomes. Subsequently, two experimental studies investigated cognitive processes underlying rater judgments, using theoretical frameworks of expertise research, social cognition and person perception. Cognitive performance of experienced and non-experienced raters was captured through the use of think-aloud procedures and verbal protocol analysis. Verbal data were analyzed both qualitatively and quantitatively.
Results: Results indicate that combining formative and summative assessment purposes in WBA enhances student learning and professional development. Essential preconditions are psychological safety and principles of 'due process'; trust in the assessment system; and delicate

balance between accountability pressures (both on rater and ratee) and freedom or self-control. Our findings indicate that assessment of performance in real-life settings is a judgment and decision making process in which raters' behaviours are shaped by interactions between individuals and the social context in which the assessment occurs. Findings with respect to information processing by raters during observation and performance evaluation are in line with findings in expertise research and social perception. Compared to non-experienced raters, experienced raters used more enriched processing, integrating observational data and case-specific, contextual information into comprehensive performance assessments. Furthermore, our data showed that raters use different performance schemas – interactively- to arrive at judgments on performance. Increased use of task-specific performance schemas in experienced raters suggests that they possess more and more sophisticated performance schemas compared to non-experienced raters.

Discussion: Based on the findings from our studies we propose an approach towards WBA which takes a predominantly constructivist, social-psychological perspective.2 Raters are active information processors, who interpret and construct their own personal reality of the assessment context. Starting from our cognition-based model of WBA, the thesis offers guidelines for how to design and implement WBA-programmes. It furthermore identifies new areas for research to advance our current understanding of WBA.

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8F/5
10 key features to improve the impact of online healthcare CPD on practice and patient care: A critical interdisciplinary review of the literature

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Introduction: Studies have found that online healthcare continuing professional development (CPD) is not successful at improving practice and patient care outcomes. To improve impact, researchers have argued that it is important to identify the key features of online CPD that can support healthcare professionals improve practice.

Methods: A critical interdisciplinary review of the literature from 1970-2011 was conducted to identify the key features of online CPD that educators should implement in order to improve practice. Firstly, a search of 3 healthcare databases identified articles that evaluated impact on practice and patient care outcomes. Studies were excluded only if they were formal courses. A wider search of educational and business databases was then performed, including grey literature to identify approaches on professional development, online education, computer-supported work, and information systems, and perspectives from editorials, position papers, and policy documents on CPD.

Results: 250 relevant articles were found and used in the review. Ten key features of online CPD that are most likely to support healthcare professionals improve practice were identified: • Supporting healthcare professionals through the implementation of new evidence, • Facilitating social interaction and collaboration in small groups, • Situating professional learning in practice, • Providing safe networked spaces for critical reflection and action research, • Integrating new knowledge and questioning of personal theories to reframe practices, • Designing social networks as a flexible online support structure to complement self-directed learning, • Providing access to trusted others to exchange information, opinion and advice, • Mobilizing strategic networks to deliver programmes to solve patient care problems, and produce knowledge, • Facilitating short-term, time-bound, synchronous discussions of dispersed learners and tutors with Web 2.0 networking technologies, and • Affecting the agency and social capital of healthcare professionals to make changes.

Discussion: The 10 key features identified point to a more complicated picture of the relationship between online CPD and improvements in practice and patient care, and a need for grounding this relationship within a radically different theory than those that currently underpin the design of online CPD to improve impact.

Conclusions: Given the increasing use of online CPD worldwide, further critical interdisciplinary research is required to evaluate how these 10 key features can be integrated into effective models to design, deliver and evaluate online CPD programmes that improve impact on practice and patient care.

8G Research Papers: Qualitative Research

8G/1
Effects of educational innovations in postgraduate medical education explored in the setting of workplace based assessment

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Introduction: Investigations about innovations in medical education usually regard their intended educational effects. However, innovations also have effects different from those they were intended to bring about(1). In postgraduate medical education (PGME) the actual effects in practice of educational interventions have rarely been studied.

Building on the assumption that knowledge of effects of innovations can aid implementation and optimization of use, we conducted a case study of workplace based assessment (WBA) in PGME. The research question was: Which kinds of effects of WBA do its users perceive? WBA was chosen as a case of educational innovation in PGME since its intended educational effects are well documented(2).

Methods: This qualitative study was performed in the Netherlands in 2011-2012. Seventeen semi-structured interviews were conducted with users of WBA in PGME (ten trainees and seven consultants) and the transcripts were thematically analyzed using template analysis. Theoretical saturation was reached. To enable exploration of effects beyond the educational scope, theoretical concepts about diffusion and effects of innovations from sociological and healthcare literature were used in the design(1).

Results: Seven domains in which WBA brings about effects were recognized in analysis: 1) affinity with WBA, 2) handling change, 3) emotions, 4) teaching and learning, 5) specialty training, 6) workload and tasks, 7) clinic and care. Additional to being effects of WBA, the contents of the first three domains can also influence the development of effects in the other domains.

Participants expressed having a certain degree of affinity with WBA. This varies from experiencing WBA as sensible and using it easily, to not grasping the idea behind WBA and regarding it as a technical system without value for training. Users of WBA shape its use to circumstances in daily practice and develop expectations about future innovations. Emotions of participants varied from annoyance with WBA due to workload, to satisfaction from effective training. WBA stimulates learning of trainees mainly through quality and structure of feedback. However, the obligation to do WBA makes users select activities for assessment based on practicality instead of relevance for future practice. Due to the attention for working with innovations, specialty training gets explicit attention, leading it to become an entity instead of an addition to healthcare. Experienced workload of the participants depends on their affinity with WBA and department organization. Some participants recognized that WBA meets current societal demands by attending to generic competencies, and it was mentioned that the educational effects might lead to provision of higher quality of care by trainees earlier in training.

Discussion: This is the first study to explore the effects that can be brought about by an innovation in PGME. The results point out that innovations in PGME can have effects beyond the expected educational scope and the intention of the original innovation.

Conclusions: With the design and implementation of an innovation in PGME, its effects in seven domains should be considered and anticipated. This can support its practical use and development of desired effects.

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8G/2

What is the meaning of reflection for medical students who are learning to teach, and how is this influenced by different reflective tasks?

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Introduction: Reflection is ubiquitous in medical education (Sandars, 2009). It can, however, be unpopular with students (Sandars and Murray, 2009) and there is conflicting evidence about its impact on learning (Mann, Gordon and MacLeod 2009). Nonetheless the GMC has recommended that students should learn to reflect and teach others as a result of which we incorporated reflection into a newly designed compulsory teaching skills course for medical undergraduates. Course evaluations over the first 10 months indicated poor engagement with the reflective component. We wondered what reflection meant to students and how this was influenced by the nature of the reflective task they were asked to complete. The theoretical approach to reflection used was to categorise different descriptions of reflection according to their conceptual features. Using this approach, reflection can be understood both as a process, with iterative or vertical dimensions, and by its content, mostly critical reflection but also emotions and professional contexts (Mann et al, 2009). Research questions: (1) What does reflection mean to medical students in the context of a teaching skills course? (2) How is the meaning of reflection for medical students affected by digital storytelling compared with a structured written reflective logbook?

Methods: We adopted a constructivist epistemology, conducting a qualitative investigation of the meaning of reflection for students before and after one of two reflective assignments. All 30 students within a single cohort were invited to participate and ten consenting students were randomly allocated to one of two tasks. One group completed a structured written reflective log asking specific questions about their experience and how this might link to future practice. The second group completed a digital storytelling task (Sandars and Murray 2009) which used photographs as a basis for reflection, with participants choosing the focus of their reflection based on daily activities. Participants completed written questionnaires before and after the task and attended a focus group. A modified constructivist grounded theory approach was used for data analysis (Corbin and Strauss, 2008).

Results: There were 3 components to student conceptualisations of reflection: (1) an iterative three-step process with different depths of critical reflection; (2) according to its content, which is generally critical reflection but may include emotions or professional contexts; and (3) as authentic or not. Four contextual factors determined authenticity: memory triggers and narrative memory; creativity and freedom; ownership and avoidance of conflicting agendas; and positive student attitudes. The meaning does not change depending on the different tasks, but different tasks impact on authenticity. Digital storytelling is associated with increased authenticity via these contextual factors.

Discussion: Students' understandings partially map onto the literature; however, authenticity as a central feature is a new

finding. High levels of critical reflection are unlikely to be achieved if students do not question their own thoughts, in other words if they do not reflect authentically. Understanding factors determining authenticity is likely to improve the quality of reflection and the value that the students place on it.

Conclusions: Reflective tasks for students should facilitate and encourage authentic reflection.

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8G/3

Improving indigenous student success in health professional degree-level programmes. Exploring what helps and hinders non-lecture based teaching and learning

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Introduction: Understanding the distinctive worldviews of indigenous students is critical to the knowledge base that drives teaching and learning practices in tertiary health programmes. This project explores Māori student success in degree-level tertiary health education in New Zealand. Research questions include (1) What teaching practices in non-lecture contexts help or hinder Māori success in degree-level study in nursing, pharmacy, medicine and health sciences? (2)What changes are needed to teaching and higher education practices in order to best support Māori success in degree-level study designed to prepare students for work in the health professions?

Methods: This qualitative study utilises indigenous Kaupapa Māori Research methodology (Smith 1999) using the Critical Incident Technique (Flanagan 1954) via interviews with 41 Māori students currently enrolled in or recently graduated from medicine (17), nursing (7), pharmacy (3) or health sciences (14) at the University of Auckland.

Results: A total of 1,346 critical incidents were identified. Sixty seven percent (n = 898) of all identified incidents helped and 33% (n = 448) hindered Māori student success. The

majority of student stories (n = 789, 59%) were related to the provision of Māori Student Support Services (69% helpful, 31% hindering). The second context (n = 375, 28%) related to the Undergraduate Programme with a mixed picture of helpful versus hindering incidents (53% versus 47%). The third context (n = 182, 14%) represents stories associated with Māori Student Whanaungatanga (family bonding) with most stories helpful rather than hindering (87% versus 13%). Thirteen sub-categories describe incidents as being associated with: MAPAS/Tuākana Tutorials, Resources, Academic Transitioning, MAPAS staff and Māori academic Staff, Māori Mentoring and Role Models, Racism / Stigma Towards Māori, Teaching Staff Characteristics, Programme Organisation, Linking Theory to Practice, Programme Incorporation of Māori Cultural Values, First Year Health Study Competition, Supporting Whakawhanaungatanga or Group Learning .

Discussion: Our findings support the need for tertiary institutions to provide additional Māori student support services, with a particular focus on fostering cultural bonding between students and their peers. The undergraduate programme was at times unsafe and hindering to Māori student success. Our findings highlight the important role of the educator as being both helpful, and hindering. Key success factors included the ability of educators to develop relational trust, demonstrate cultural safety and utilise high quality teaching and learning methods whilst having an excellent grasp of the content required. Overall, our findings support the need to explore notions of a hidden curriculum that may be operating within clinical and non-clinical health professional training programmes (Hafferty 1998).

Conclusions: Institutional changes need to occur within the context of the broader tertiary environment, at the level of the educator and the student. Based on our findings, quality tertiary teaching for Māori students within health programmes should: (1) Use effective teaching and learning practices, (2) Provide academic support that is culturally appropriate, (3) Provide pastoral support that is culturally appropriate, (4) Provide a culturally safe learning environment, and (5) Encourage cohort cohesiveness.

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8G/4

Distance supervisors in postgraduate medical training – providers of quality or questionable education?

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Introduction: Doctors learn their chosen specialty by working as doctors apprenticed to experienced clinical supervisors. Traditionally these educational dyads are co-located and share patient loads. In remote Australia and Canada small populations, including Indigenous peoples with high morbidity and mortality rates, are dispersed over vast geographical areas. The medical workforce needed to deliver services in these communities, plus advances in information and communication technology created a milieu for the educational innovation of distance clinical supervision in general practice (GP) training. The aim of this paper is to document the experience of distance supervisors and how they conceived, constructed and enacted their role and responsibilities to provide quality clinical supervision for registrars.

Methods: Australian and Canadian distance GP supervisors were interviewed in-depth using a topic guide informed by socio-cultural (1, 2) and work-based learning theories (3). Participants were asked to describe their experience in-depth, give examples of how and why this method of supervision worked or not, and what they perceived as their role and responsibilities. The interviews were transcribed, coded openly and inductively analysed into themes to produce a template for constant comparison analysis.

Results: Respondents perceived their role as a holistic one to support and monitor their registrar's work and well-being as a person working in isolated and sometimes violent communities. Supervisors facilitated learning rather than provide didactic teaching, acting as a sounding board for registrars to discuss non-acute but complex issues. Canadian supervisors took responsibility for the care of their registrars' patients via formal chart review of each patient seen. Australian supervisors ranged from matching their sense of medico-legal liability with active observation of their registrar's practice to a passive role of answering questions from registrars they viewed as independent, responsible practitioners.

Respondents relied heavily on registrars' descriptions of issues and having good insight into their own abilities and weaknesses. Opportunities to visit and give direct feedback based on observation were valued and essential if there were hints that a registrar was struggling.

GP supervisors described themselves as more articulate and better educators when distance prevented them taking over the clinical care of their registrar's patients. Distance forced the supervisors to allow registrars to stretch themselves to the limit of their clinical capacity.

Discussion/Conclusions: The perceived difficulties of supervising at a distance were partially offset by unexpected educational benefits. Distance supervisors learned to articulate and share their knowledge and skills, and stretch their learner to their limits so creating a zone of proximal development where supervisors were able to see their registrar's true potential (4). This creative adaptation of teaching style went some way to reconciling the need for clinical service provision in isolated areas with educational provision.

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8H Short Communications: Specialist and GP Training

8H/1
Taking a Detour: The Impact of Supervisor Interruptions During Admission Case Review

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Background: During admission case review, supervisors should support their clinical teams in the development of a comprehensive assessment and plan for admitted patients. Research on this aspect of supervisor review practices has been limited. Informed by genre theory, this study explored the impact of supervisor communication practices on the team's ability to achieve comprehensive case review.

Summary of work: Using a multiple case study approach, 19 patient cases admitted to an internal medicine teaching team were collected through chart extraction, direct observation and audio-recording of admission case reviews. A constant comparison approach was used to identify emerging themes within and across cases.

Summary of results: The analysis yielded the key theme of 'detours'. Five detour types, largely provoked by supervisor interruptions, were identified. Detours served functional purposes of teaching and patient care, but they could also create deviations from the usual case presentation genre, risking the omission of important information. Supervisor and presenter behaviours that mitigated the potential negative effects of detours were identified.

Conclusions: Detours simultaneously afford valuable opportunities for teaching and care while threatening comprehensive review within the case review genre.

Take-home messages: Future research should explore detours in other settings and examine other strategies that maximize their positive and minimize their negative effects.

8H/2
The transition from specialty trainee to hospital consultant: an international comparison between the Netherlands and Denmark

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Background: The transition from specialty trainee to hospital consultant is accompanied by a plethora of challenges, from responsibility within patient care to numerous non clinical tasks. We compared the transition to new hospital consultant within the Netherlands (NL) and Denmark (DK) in order to investigate the influence of contextual factors on this transition, such as working conditions and national characteristics of specialty training programs.
Summary of work: All 2643 new consultants in the Netherlands and all 1336 new consultants in Denmark registered in 2007-2010 received an identical survey. The survey contained items on preparation received through specialty training within both medical and generic competencies, intensity of specialty training and the transition, social support, and burnout.
Summary of results: New Danish consultants (52% n = 691) perceive their specialty training and the transition less intense than Dutch new consultants (32% n = 840) report higher levels of preparedness for the generic competencies needed as a consultant, and score lower on burnout.
Conclusions: Several contextual factors and their influence on the found differences will be discussed, such as regulations concerning working hours, maternity leave and cultural characteristics. This study provides valuable insights into this demanding stage within the medical career.

8H/3
'Learning to see' - Educating the eye for visual cue interpretation during operative surgery

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Background: Interpretation of visual features is an important skill in medicine. However, we know little about how visual perception is developed in novices. This study explored how surgical trainees learn to interpret visual cues intra-operatively.
Summary of work: Using a multiple case study design, observational fieldnotes and integrated video-and-audio recordings were collected for twelve surgical cases. Within and across case analysis employed constant comparative methodology to identify dominant themes, supported by NVivo software.
Summary of results: Visual cue interpretation was a process of trainer-trainee co-construction: "assessing" what the trainee sees, "declaring" what is seen, "exploring" what is seen and "defining", conclusively, what is seen. "Exploring" took two forms - Socratic and Authentic, depending on case difficulty and trainee level.
Conclusions: In surgical training, visual cue interpretation is developed through a process of co-construction. This study offers a language for making this process an explicit part of training.
Take-home messages: The co-construction process, and the language we have developed to describe it, has relevance for other training settings where visual judgments are central to expert practice.

8H/4
Going the Distance: Early Results of a Distributed Medical Education Initiative for Royal College Residencies

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Background: There is a shortage of specialty physicians practicing in rural Canada. The Distributed Royal College Initiative (DistRCI) at the University of Calgary is increasing specialty residents' exposure to rural medicine through regional rotations and electives. The impact of these rotations and characteristics of them were assessed.
Summary of work: Residents were sent a voluntary questionnaire following their regional rotation. The questionnaire measured resident's satisfaction with the regional experience, interest in undertaking another rotation and the impact of the rotation on potential future regional practice location. The resident's perceptions of preceptor's knowledge of goals and CanMEDS roles were also assessed. The survey also asked for written comments on the rotation.
Summary of results: Prior to this rotation 45% of respondents indicated they would be likely to practice in a

regional community. Following the rotation 76% of respondents indicated they would be likely to practice in a regional community. There was excellent understanding by preceptors of the goals of the rotations and the CanMEDS roles. Analysis of the comments revealed many positive characteristics of the rural experience across all disciplines. Further data will be presented.

Conclusions: Distributed programs such as the Royal College Initiative are crucial in helping expose and recruit specialist physicians to practice in rural and regional areas.

Take-home messages: Rural specialty training may be an effective method to recruit specialty physicians.

8H/5
Missing the Mark? Consistencies and Discrepancies between Pediatric Provider and Parent Perceptions of Health literacy and Shared Decision-Making

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Background: Health outcomes have been linked to health literacy (HL) levels, cultural competence (CC) and shared decision-making (SCM). To date, there is little literature on the discrepancy between perceptions of HL/CC/SDM in pediatric providers and their patients.

Summary of work: Objectives: (1) Measure HL in parents of children in urban outpatient practice; (2) Compare parent perceptions of resident skills in HL/CC/SDM with resident self-perceptions in same areas. An anonymous survey was administered to caregivers in hospital-affiliated outpatient practice. The surveys included Newest Vital Sign (NVS) for HL measurement, and questions to assess parental perceptions of resident skills in HL/CC/SDM. Pediatric residents completed the same survey, from the perspective of their average parent.

Summary of results: Two-hundred Caregivers and 30 residents responded. Caregiver characteristics: age=30.6 years; education=12.3 years. Residents accurately estimated parent mean HL level. High concordance areas in SDM include: gave options, elicited concerns/fears, provided mutually acceptable solution. Residents overestimated their use of HL/CC strategies: teachback (89% vs. parent 37%); query about CAM use (39% vs. 8%); use of visual aids (89% vs. 26%); use of professional interpreters (100% vs. 61%).

Conclusions: Residents accurately estimated HL level of their average parent. They overestimated use of HL/CC techniques such as teachback," use of visual aids, CAM, and use of professional interpreters.

Take-home messages: Resident curriculum in HL and SDM should focus on the areas identified.

8H/6
Anaesthetists' Non-Technical Skills – adapting the system to another setting

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Background: Non-technical skills (NTS) are widely acknowledged as essential for safe medical performance. Behavioural marker systems such as Anaesthetists' Non Technical Skills (ANTS) have been developed to aid training in and evaluation of these skills.
The system consists of 4 categories, 15 elements and examples describing good and bad behaviour. However, a system developed in one cultural context might not apply to other countries. The aim of this study was to develop a Danish behavioural marker system for anaesthetists (ANTS-DK) using ANTS as a template.

Summary of work: Six semi-structured group interviews were conducted with scrub nurses, anaesthetic nurses, surgeons and anaesthetists. The interviews were transcribed and coded, NTS were identified and sorted deductively during an iterative process using the ANTS structure. NTS that did not fit the existing structure were analysed inductively. Content validity was ensured by presenting ANTS-DK to a panel of anaesthetists with educational responsibility.

Summary of results: From the interviews it was evident that ANTS-DK had to change on all three levels; one category is amended, an element is added and half the behavioural markers are changed. The structure of ANTS-DK will be presented at AMEE 2012.

Conclusions: An empirically derived ANTS-DK was developed based on ANTS addressing the local context.

8H/7
Part-time general practice registrars: who are they and what do they see?

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Background: An increasing trend toward flexible (part-time) general practice training raises questions about its equivalence to the more traditional full-time route. There are little existing quality data on this topic on which to base policy. It is therefore timely to address this gap.
Summary of work: We examined the demographics of part-time registrars in our Regional Training Provider (RTP) (General Practice Training – valley to coast) including hours worked, numbers of patients seen and time to completion of training. We looked at the scope (comprehensiveness) of clinical experience of part-time and full-time registrars in terms of exposure to clinical problems, utilising data from the Registrar Clinical Encounters in Training study which is a multi–centre longitudinal cohort study with, to date, detailed data on over 22,000 registrar consultations.
Summary of results: In our RTP 35-40% of those in GP terms are part-time and they differ from full-time registrars in several demographic aspects. Despite this, clinical exposure, assessed by several measures, appeared equivalent.
Conclusions: On a number of important parameters, part-time training experience appears to be similar to full-time.
Take-home messages: Flexible training should not be discouraged on the grounds of inadequate clinical exposure.

8H/8
Steering the patient mix of a general practitioner trainee is not as easy as it seems. Results of a randomized controlled intervention

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Background: In studies exploring the patient mixes of general practitioner (GP) trainees, gaps were repeatedly found, as were disparities between the patient mixes of GP trainers and trainees. This reduces the opportunities of trainees to acquire enough competence. We investigated whether steering the patient mix can be effectuated by instructing medical receptionist, trainer and trainee.
Summary of work: RCT. 73 trainees were randomized. Patients with skin and psychosocial conditions were actively assigned to trainees in the intervention group (n=35) during two successive trimesters. The patient mix was measured by extracting data from electronic patient records. Learning outcomes were measured by self-efficacy questionnaires and by a knowledge test.
Summary of results: No increase was found in patient volume and diversity of the steered conditions in the intervention group as compared to the control group. However, the percentual increase of exposure to skin conditions was greater in the intervention group. No difference in skin self-efficacy and psychiatric knowledge was found. The increase of psychosocial self-efficacy was greater in the intervention group. In a regression analysis, patient volume was a significant predictor of both skin and psychosocial self-efficacy.
Conclusions: Despite the difficulty in implementing steering in daily practice, tailoring the patient mix to the individual learning needs of trainees could be considered.
Take-home messages: Steering the patient mix of a general practitioner trainee is not as easy as it seems.

8I Short Communications: Education Environment

8I/1
Using the learning environment to advance patient-centered care

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Background: The Liaison Committee on Medical Education requires medical education programs to ensure learning environments promote the development of professional attributes in students. Such professional behaviors in healthcare members are essential in creating patient-centered models of care.
Summary of work: At Emory, the learning environment is continuously measured by the Professionalism Learning Environment Inventory (PLEI). The PLEI is an evaluation students complete during clinical rotations. It provides a meaningful description of the areas where the learning environment does and does not support the behaviors desired in medical students. The newly developed "Emory Pledge" is a commitment that specifies the actions and behaviors necessary to create a teamwork environment and serves as a tangible means by which healthcare members can hold each other accountable. With the support of leadership, feedback of the learning environment data to clinical departments is a new process to specifically educate faculty of areas needing improvement. In an attempt to foster a culture that permeates the entire organization to succeed in improving the delivery of care and integrate the academic and clinical quality missions, the ongoing monitoring of the learning environment will be used as one marker in measuring the success of the Pledge initiative.

8I/2
Assessing the educational environment in the operating room - a measure of resident perception in Ramathibodi Hospital

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Background: To assess Thai residents and fellows' perception of educational environment in the operating rooms in Ramathibodi Hospital using the Surgical Theatre Educational Environment Measure (STEEM).
Summary of work: This is a cross-sectional observation study. The STEEM questionnaire was administered to the 204 resident and fellows in Obstetrics and Gynaecology and other surgical fields (Surgery, Orthopedic, Otolaryngology and Ophthalmology) at the Faculty of Medicine, Ramathibodi Hospital, Mahidol University from January 10 to April 30, 2010.
Summary of results: The overall mean score of 71.34% suggests that residents' learning environment is satisfactory. The highest score was in teaching and training subscale (76.42%) and the lowest score was in workload/supervision/support (66.75%). The reliability of STEEM in this study was 0.655 (Cronbach's alpha). The reliability for individual subscales including teaching and training, learning opportunities, atmosphere and workload/supervision/support were 0.735, 0.700, 0.625 and 0.225 respectively.
Conclusions: The learning environment in the OR at Ramathibodi Hospital was satisfactory for Thai residents and fellows. Although reliability is slightly lower than previous studies, STEEM has a potential to be applied as a tool for assessing the educational environment in postgraduate surgical fields in Thailand.
Take-home messages: The learning environment in the OR for Thai residents and fellows was satisfactory. Assessment of educational environment in postgraduate surgical fields in Thailand should be encouraged.

8I/3
Learning environment from the students' perspective - a qualitative interview study about the learning environment on two award-winning departments

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Background: Clinical clerkships are essential to all undergraduate medical education. According to a socio-cultural perspective on learning, the context and culture of the social environment are important for learning. Previous studies have established the importance of the learning environment and partly described it. However, studies of departments including multiple professions and connections to sociologic theories are still rare.
Summary of work: The purpose of this study was to investigate students' perceptions about the learning environment in order to identify characteristics for a strong learning environment. Two awardee departments were selected and semi-structured interviews were conducted with students from the both departments. The students were from four different professions. The interviews were analysed with qualitative content analysis and characteristics for the learning environment for each department were identified.
Summary of results: The characteristics of the two departments were overlapping in that degree of participation felt by students and attitudes from clinical staff was perceived as central for a strong learning environment.
Conclusions: To be able to develop strong learning environment suggestions are to work at a system level. Further research is required to investigate how strong learning environments can be developed and sustained.
Take-home messages: Higher degree of participation can improve the learning environment for a student during clinical clerkship.

8I/4
Relationships Matter: Student and Preceptors in Longitudinal Integrated Clerkships

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Background: A longitudinal integrated clerkship (LIC) was implemented at UAlberta in September 2007. Third year students in the program spend 9 months in one community with a small number of preceptors. Research has explored how continuity of supervision affects learning processes, e.g. assessment and feedback, but there is little on the relationship between preceptors and students.
Summary of work: The question for this qualitative study is: "What is the lived experience of preceptors and students in the LIC?" 35 reflective conversations were held with LIC students, and 11 with 8 primary preceptors. Transcripts were analyzed individually and holistically for meaning, and then by together for emerging themes, beginning in a descriptive

frame and progressing to grounded theory using sensitizing concepts from community of practice theory, professional identity, and ethic of care.

Summary of results: The results show that the learning environment is a zone of proximal development. Preceptors and students commit to developing relationships based on trust. Preceptors demonstrate the qualities of caring teachers and students experience this care. Learning is enhanced in these relationships.

Conclusions: Community of Practice theory contributes to understanding the learning environment. The affective dimensions of the zone of proximal development contribute to LIC student learning and the development of professional identity.

Take-home messages: Relationships matter.

8I/5
Dundee Ready Education Environment Measure (DREEM) in Faculty of Medicine Universitas Indonesia (FMUI): lessons learned

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Background: The importance of educational environment has been established. Dundee Ready Education Environment Measure (DREEM) is a tool to measure such environment. Faculty of Medicine Universitas Indonesia (FMUI) has been using DREEM since 2010, and the results were used to improve the educational environment in FMUI.

Summary of work: Paper-based DREEM survey was conducted in 2010. Web-based DREEM survey was conducted in 2011. All students have access to the survey. Their responses were voluntary and anonymous. The results were analyzed and recommendations on how to improve the educational environment were given.

Summary of results: The response rate was higher in 2010 compared to 2011 (93,89% vs. 31%). There was improvement in the DREEM's overall score from 121.45 in 2010 to 129.6 in 2010. The aspect that needed improvement was the teaching aspect in 2010, and the student support system in 2011. Recommendations given and executed were mostly on faculty development in 2010, and on student support in 2011.

Conclusions: DREEM has been conducted in FMUI since 2010 and the results were used to improve the educational environment.

Take-home messages: DREEM should be combined with other tools to assess the educational environment comprehensively, and efforts towards improvement should be executed.

8I/6
DREEMing in Slovenia - peer versus faculty teaching in light of average grade

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Background: We employ DREEM to measure students' educational climate perception, yet we know little about potential average grade influences. Our year-3 students can choose peer taught (PT) student selected component on internal medicine clinical skills training, whereas faculty taught (FT) internal medicine is obligatory subject. Is there statistically significant difference between PT and FT educational climate perception among medical students attending both teachings in 2011/2012? Does their average grade correlate with DREEM score in either setting? We hypothesise: there is no significant difference in total DREEM score. The score positively correlates with average grade.

Summary of work: Adopted and piloted DREEM questionnaire (validity maintenance) was completely filled by 34 and 31 students (out of 39 attending PT subject) for PT and FT climate perception, respectively, without notification of intended subject comparison.

Summary of results: Mean total DREEM score is 158 (SD=11) and 124 (SD=21) for PT and FT subjects respectively (p=0.01). Pearson correlation (-0.23) between average grade and total DREEM score is closest to significance in PT subject (p=0.19). Students finding DREEM as good tool for educational climate measurement scored significantly higher (p=0.01).

Conclusions: There is statistically significant difference in total DREEM score favouring PT environment, with which average grade shows negative correlation tendency.

Take-home messages: Educational climate is excellent in PT environment.

8I/7
Measuring educational environment of two education systems running simultaneously in a medical school with (DREEM) inventory

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Background: To identify and compare the educational environment of traditional and integrated system of undergraduate medical education by using Dundee Ready Education Environment Measure (DREEM) Inventory (Roff et al., 1997) in order to diagnose the strengths and weaknesses in the climate.

Summary of work: Total 137 out of 180, (n=63; for final year, 46 F and 17 M & n=74; for 4th year, 49 F and 25 M), students filled the inventory respectively, response rate was 76%. Mean age of the final year and 4th year students was 23 and 22 years respectively.

Summary of results: On analysis of DREEM inventory the overall score of integrated system was 130 and traditional system scored 114, fall in more positive than negative environment, but integrated system score was more towards excellent i.e.150-200. Subscale of inventory revealed the following mean score results: Perception of learning, 4th year scored 37-a more positive perception while traditional class has 25, just on border of teaching is viewed negatively. Others subscales does not deviate more.

Conclusions: Positive perceptions of integrated system's students identified the strengths of the curriculum i.e. curriculum enhance their problem solving skills, competencies, student centeredness, teaching and learning strategies strengthened retention of their knowledge in long term memory on the other hand traditional system students scored negative to these areas.

Take-home messages: Dreem inventory is a useful tool in measuring the learning environment and helps in finding the problems in it.

8I/8

Analysis of the educational climate in the Faculty of the Medical Sciences, University of the West Indies (UWI), Cave Hill, Barbados

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Background: In 2008, the MBBS programme at UWI, Cave Hill, was expanded to include preclinical studies; after 41 years of existence. The objective of this study is to investigate students' perceptions of the educational climate in the MBBS programme at UWI, Cave Hill.

Summary of work: A survey consisting of 51 items: the 50 – item Dundee Ready Educational Environment Measure (DREEM) inventory plus an open-ended question, "if you could change five things about the medical school at UWI, Cave Hill, what would they be?" was used to determine students' perception of the educational climate in all 5 years of the programme. The DREEM inventory data were analyzed using descriptive statistics and analysis of variance. Categorization and thematic analysis were performed on the responses to the open-ended question.

Summary of results: The response rate was 86.4%, 223/258 students, with 113 preclinical and 110 clinical students. The mean DREEM score for all years was 114.7 ± 21.70. The subscale with the highest score was 'course organizers' perceptions', 60.9%, while the 'self-perceptions' subscale had the lowest score, 52.8%. The main themes were: the need for additional space allocation for students, improved communication with faculty and expanded library resources.

Conclusions: The overall perception of the educational climate was on the positive side in the MBBS programme. However, there are still critical areas for improvement at all levels.

Take-home messages: Rectification of the areas of concern should be monitored by cyclical evaluation of the educational climate.

8J Short Communications: International Collaboration and Sharing Resources

8J/1

Application of BLEnDT©: Blended Learning Design Tool in the curriculum of The Lee Kong Chian School of Medicine and Imperial College Faculty of Medicine

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Background: The development and use of interactive learning materials in Higher Education has experienced rapid growth not only as a way of enhancing teaching and learning but also as a way of meeting the educational needs of increasing numbers of students located in very diverse environments. Blended learning combines face-to-face and online teaching and learning. However, finding the right balance for blended learning programmes has been identified as a challenge (Troudi & Alebaikan, 2010). Blended learning has been demonstrated to provide positive effects on the learning process (DeLacey & Leonard, 2002).

Summary of work: This paper introduces the instructional framework BLEnDT©: Blended Learning Design Tool to facilitate the design of blended learning approaches. This tool provides an effective and systematic way of distinguishing the learning outcomes that lend themselves to interactive, self-paced online learning from those better suited to face-to-face delivery or online delivery following a Constructivist/Collaborative approach. BLEnDT© guides the classification of learning outcomes under the (cognitive, affective and psychomotor) domains, helping Learning Technologists, academics and Subject Matter Experts (SMEs) identify the optimal blended learning approach for the intended learning outcomes.

Conclusions: This paper demonstrates the application of BLEnDT©: http://tinyurl.com/3fa5x3z in the design of blended learning courses at The Lee Kong Chian School of Medicine, a medical school developed jointly by Imperial College London and the Nanyang Technological University, Singapore and Imperial College Faculty of Medicine.

8J/2

How to train clinical instructors in the clinical teaching of microskills. An international pilot project in Cambodia

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Background: In Cambodia, a shortage of clinical instructors with rising number of medical students requires time-efficient bedside teaching.
Summary of work: To test the feasibility of training clinical instructors in microskills in Cambodia, we designed a 4-day workshop, using a 2-step training-of-trainers model. We tailored the program to Cambodian learning needs. We developed three themes: learning climate, the 5-microskills, and feedback. Learning activities included didactics with MCQs and role plays. Assessment used quantitative data (MCQ answers collected with anonymous audience response systems), and qualitative data (final survey and observation).
Summary of results: International instructors first trained 13 trainers, in English with translation. Then, these trainers successfully delivered a similar workshop to 23 clinical instructors from four teaching hospitals, in Khmer language. Quantitative data confirmed overall understanding; all participants expressed satisfaction with the workshop and their intention to use the skills. Role plays provided practice using the microskills and identified improvement needs. Qualitative data highlighted some mistranslation of the microskills content and transcultural gaps.
Conclusions: This pilot workshop was highly effective in training clinical instructors in the microskills. Follow-up workshops in Khmer are currently being implemented in teaching hospitals.
Take-home messages: Lessons learned from this international project can be used for countries willing to train clinical instructors to use the microskills.

8J/3

News on DocCom - our successful online resource for healthcare communication education runs now on HTML5 (iPad) and gets a German sibling!

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Background: DocCom, a series of 42 media rich online modules for the teaching and learning of healthcare communication skills, which is created jointly by the American Academy on Communication in Healthcare (AACH) and Drexel University College of Medicine (DUCOM), is currently being used by more than 14,000 subscribers. See http://webcampus.drexelmed.edu/doccom
We attribute several factors to the success of DocCom: The high quality of the product in terms of text and new media, the recognition of our authors and the institutions they represent, and the fact that we keep the resource current in content and technology.
Summary of work: Each module is revised at least once every 3 years, and recently all 42 modules were enhanced by HTML5 code and MP4 videos, to which they switch if Flash is not supported, so it now runs natively on iPads and devices to come. DocCom attracted some interest outside of the English world, which resulted in a completed translation into Japanese language, and the funding of DocCom.Deutsch, which is not a mere translation but a re-creation of 12 core modules in the German language and culture, which will be done at the University of Berne Medical School's Institute for Medical Education (IML).
Conclusions: DocCom keeps growing as the state of the art resource for healthcare communication education.

8J/4

eLearning as a capacity building solution for doctors and nurses in malnutrition management

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Background: Many children die unnecessarily from malnutrition. Inadequate knowledge and competency of health professionals limit its effective management. A solution to develop the capacity in malnutrition management is to provide health professionals with standardised and accessible training.
Summary of work: The International Malnutrition Task Force and University of Southampton Faculty of Medicine developed an eLearning course, which provides interactive

learning in 3 modules – core concepts, identification and management, based on WHO's guidelines. With the Uganda Paediatric Association (UPA) and Makerere University Medical School, the effectiveness of the course and appropriateness of its delivery were investigated in Uganda using a mixture of quantitative and qualitative methods. Eight six health professionals participated in three half-days study.

Summary of results: The course was well received for its design and delivery. Participants' knowledge improved significantly between the pre- and post-test total scores (mean difference = 29.7, 99%CI, 26.9 to 32.5, p<0.001). Understanding of and competency in malnutrition management also improved (16 participants with good understanding to 66 and 9 being competent to 65 respectively).

Conclusions: The results showed that by completing the eLearning course participants acquired the core knowledge and competencies required for malnutrition management.

Take-home messages: eLearning can provide standardised and accessible training for malnutrition management in developed and developing countries.

8J/5
A cross-cultural educational model in improving the healthcare in Burkina Faso

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Background: To improve healthcare quality in an underserved region is important, and education to build clinical competency for the local healthcare personnel has been considered a "root" solution. This study is to report a cross-cultural educational model through international collaboration between Taiwan and Burkina Faso, and the difficulties in training trainers were also identified.

Summary of work: Since early 2011, Taiwan ICDF (International Cooperation and Development Fund) has trained trainers of CT scan technicians and midwives in Burkina Faso. Through exchange personnel, the education included hands-on practice, visual-assisted instruction, and deliberated feedback. With assistance, regular training courses were established in Burkina Faso. Program evaluations were performed at the end of the training.

Summary of results: Two doctors, four technicians and four midwives completed two month training in Taiwan. Their performance were deemed satisfactory in an evaluation of 5-point Likert scale (4.66±0.39). When returning Burkina Faso and with the assistance from Taiwanese experts, two training courses for CT scan operation and one for midwives were conducted successfully. The difficulties were identified as communication barriers, the insufficiency of medical foundation and cultural-social discrepancy.

Conclusions: Clinical education across cross-cultural boundary is difficult, but can be conveyed by exchange personnel, plus learning by doing/teaching models.

8J/6
Medical Education in Arab Countries: Trends & Challenges

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Background: In the last two decades, Medical Education has witnessed a change in curriculum, so as to maintain its efficiency and effectiveness. Considerable curricular changes are underway in many medical colleges worldwide. The literature is lacking of data about status of medical education in Arab countries.

Summary of work: To assess the current status of undergraduate medical education, in the medical colleges of Arab countries. Furthermore, the study aimed at exploring the future directions of curriculum trends in Arab countries. A structured open-ended data collection form was filled up by the dean or the vice-dean of every single medical school in Arab countries. Sixty-five medical schools were included in the study using Online Survey Monkey portal.

Summary of results: Forty medical schools completed the survey. The status of undergraduate medical education in Arab countries was described. This include the annual intake, the faculty to student ratio, the medium of instruction, the presence of university and/or teaching hospital and other clinical facilities, the number of students graduated each year, the attrition rate. The types of curricula and future curricular trends have been all presented in this paper. The expansion of medical schools particularly the private medical schools was very obvious.

Conclusions: Despite the diversity in the curricula in medical schools in Arab countries ranging from the traditional to the hybrid PBL, most of these schools are either following or moving towards the new curricular trends in medical education. The large number of annual student intake is a major challenge in some Arab medical schools. The quality of clinical education is another challenge. More strict actions have to be taken to assure the quality of medical education in private medical schools.

8J/7
A national survey of international electives for medical students in Japan: 2009-2010

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Background: International electives can provide experiences for medical students to learn about health systems and foster critical self-reflection. So far, little is known about the status of Japanese students' engagement in international electives. We sought to provide information about the internationalization of Japanese medical education by clarifying the current situations of international electives.

Summary of work: We undertook a cross-sectional national 17-item questionnaire survey of program officers in all medical schools in Japan in February 2010.

Summary of results: Sixty-five (81.3%) of 80 Japanese medical schools responded to the questionnaire. 462 Japanese medical students (3% of all students in their clinical years) travelled to North America (45.5%), Asia (25.0%), or Western Europe (24.4%) to study abroad. The number of students who participated in international electives was significantly increased when academic credit was available (median 6 vs. 1, P<0.001) and institutional affiliations were present (median 7 vs. 2 students, P<0.001). Most students were evaluated by means of a report submitted on return.

Conclusions: About 3% of Japanese medical students currently participate in international clinical exchange. Institutional affiliations and academic credit are each associated with increased utilization of international electives.

8K Short Communications: Curriculum Evaluation

8K/1
Cross comparison, official ranking and specific feedback increase the quality of the clinical teaching at a university hospital

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Background: Clinical teaching in medical schools needs continual improvement. We developed an assessment instrument for clinical teaching to implement across all clinical rotations in order to enable cross comparison, official ranking and feedback.

Summary of work: A web-based questionnaire, inspired by a seven-category concept from Stanford University, was introduced at all hospital departments (n=25) at Uppsala University Hospital, Sweden. Ten questions reflecting different aspects of clinical teaching were used (Likert scale 1-6). Strong participation among students, faculty and departments were reached.

Summary of results: The evaluation instrument was gradually introduced from autumn 2009. Medium time from introduction to follow-up in June 2011 was 2.5 semesters. The students' response rate was 70% (n=1981). The departments' median ratings (25th-75th percentile) at baseline were 4.05 (3.79-4.27). At follow-up, the score had increased to 4.56 (4.31-4.72) (p<0.05).

Conclusions: The introduction of a uniform clinical teaching evaluation instrument enabled cross comparison between different departments' and resulted in a rapid and substantial increase in the quality of clinical teaching.

Take-home messages: A uniform clinical teaching evaluation instrument enables cross comparison between different departments' and stimulates achievements to improve the quality of clinical teaching.

8K/2
Is no news good news?
*****Winner of 2011 Miriam Friedman Ben-David New Educator Prize*****

Alena Chong (*UCL, Department of Primary Care & Population Health, London, United Kingdom*)

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Background: Well-constructed student evaluation questionnaires (SEQs) rely on students to complete and return them at the end of modules. The response rate is critical for the impact and utilisation of collated data on policy and curriculum design: Incentives can improve it.

Summary of work: The GP-SEQ is electronically sent to all final year students at the end of their 4-week out-of-London GP module for voluntary completion without incentives. Its content is revised annually: 41 questions altogether: 6 allowing free text input. Data is shared with the GP Faculty, Quality Assurance Unit, tutors and students.

Summary of results: Last year, the overall GP-SEQ response rate was 74.6%: significantly higher than for other final year modules.

Conclusions: High response rates to SEQs are possible and sustainable without incentives. The GP course remains highly rated by the vast majority of students, who comment that hands-on experiences facilitated their learning. This aligns with Faculty aims to deliver a GP assistantship, where students 'think and act like doctors'. Further qualitative focus group research will identify student factors that influence GP-SEQ response rates: Do students value giving feedback? Do questions, e.g. "What could be improved to help your learning?" encourage students to constructively reflect their ideas to Faculty, so that courses can continuously improve? Does incentivising SEQ completion impact on feedback content and its honesty?

Take-home messages: Faculties need student "news" to inform policy and curriculum development: "Good news" shows that students recognise 'best evidence medical education' in action.

TUESDAY 28 AUGUST 2012

8K/3
Site visits as a tool to evaluate clinical rotations: Description of a method

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Background: 22 university affiliated hospitals participate in the clinical education of medical students at University of Copenhagen. The Committee on Quality Development (CQD) performs site visits on behalf of the director of medical studies to assess the quality of the education.
Summary of work: A medical student, a clinical professor and a member of the administration perform CQD site visit by prior appointment. They conduct separate interviews with doctors and medical students at the end of a clinical rotation.
Summary of results: Based on the interviews and on the interviewee's completion of questionnaires the CQD drafts a short report including a contract with goals for improvement, which eventually is discussed with the department's head and its clinical professor. Afterwards the contract is signed.
Conclusions: The revised format has increased the efficiency of the CQD's site visits. This is important because of the large number of clinical departments.
Take-home messages: After careful planning an entire site visit can be completed in just 4 hours.

8K/4
Factors influencing students' satisfaction: a follow up study

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Background: The main goal of this study is a data-mining approach of the students' satisfaction based on an educational inventory and to provide educational management with an adequate tool as well.
Summary of work: An in-house 16-items inventory was created to evaluate students' satisfaction. 11294 anonymous records were processed by a multi-language questionnaire at the Medical Faculty. First, a statistical validity analysis was used by Confirmatory Factor Analysis. Secondly, an Item-Response Theory (IRT) and CHAID decision tree models were created.
Summary of results: Significant differences were found between the preferences of the first-year and the second-

year students. In the first year, quality of the lectures and motivation for independent thinking were the most important influencing factors compared with that of the second year students who preferred the general quality of subject. This tendency remains unchanged in the third year. In the clinical modul of education, the quality of the practices is the predominant factor.
Conclusions: Based on the results, our inventory is a valid predictive and descriptive tool for measuring students' satisfaction concerning education.
Take-home messages: It is feasible to develop statistical models that can help us to find optimal modifications in education to increase the students' satisfaction.

8K/5
Analysis of personal evaluation of the course in relation to candidates' competency at an organized programme of continuous medical education in the field of reanimatology in Croatia

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Background: Final course results (MCQ and Cardiac Arrest Simulation Test) were registered for candidates that attended Croatian Resuscitation Council courses between 2002 and 2010. Questionnaire has been distributed to all participants, questions included personal evaluation of the course quality.
Summary of work: Purpose of the study was the analysis of personal evaluation of the course quality in relation to candidates' competency (knowledge and skills). From the total number of 1650 candidates, 793 replied to the Questionnaire. Answers were analysed according to basic education (doctor-nurse).
Summary of results: Regression analysis showed statistically significant (p<0.001) relation of positive evaluation of the course with the competency of candidates at the end of the course. It is noticed that in the group of doctors better results have those who considered the course more as the refresher of their knowledge rather than acquirement of new knowledge.
Conclusions: Both groups of participants (doctors and nurses) expressed their satisfaction giving high marks for the content, organization and the course in total, which is related to their high passing score at the MCQ, CAST and the final course result.
Take-home messages: The study confirmed the hypothesis that personal evaluation of the course is related to final results of the course.

8K/6
The use of student-derived, Task-Specific Confidence Indices as a course evaluation and faculty feedback methodology

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Background: Determine if student self-assessments of their confidence in performing four core clinical tasks provides feedback sufficient for faculty to identify and remedy their instructional deficiencies.
Summary of work: Our year two curriculum utilizes Problem- and Task-Specific Learning Modules (PTLMs) to enable students to competently diagnose, treat, manage and explain clinical phenomena associated with the clinical problem at hand (e.g., chest pain). Students utilized a self assessment instrument to express their confidence in performing these four tasks after each of 25 PTLMs administered in both 2010-2011 and 2011-2012. We then calculated a Confidence Index (CI) for each PTLM's four tasks, and averaged them to compute an overall CI for that PTLM. Faculty were informed of the four individual and overall CI for their PTLMs. We also calculated an annualized CI for all 25 PTLMs offered in 2010-2011 and repeated in 2011-12.
Summary of results: The annualized CI mean/SD was 71.28/20.69 (n=17,223 CIs) in 2010-2011, and 73.74/18.11 (n=18,156 CIs) in 2011-2012. A t-test revealed a significant increase in year-over-year annualized CIs: t (n=34,206) = 11.895, p < .001, with 19 of 25 PTLMs showing improved CIs.
Conclusions: Faculty feedback in the form of student CIs likely contributed to instructional improvements in subsequent PTLMs.
Take-home messages: Feedback in the form of student derived, task-specific confidence levels, appears to be a useful means by which faculty can identify and remedy instructional deficiencies.

8K/7
Improving post-graduate courses through collective reflection – exploring the teachers' views

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Background: Together with Swedish experts in psychiatry, the METIS-project has developed over 20 constructively aligned courses for psychiatric residents using the Adaptive Reflection course design method.
Summary of work: 40 teachers reflected on a "successful course". Ideas were categorized according to their inherent importance for students and/or teachers. The emergent patterns were discussed and related to their own successful teaching stories. Data, collected as photographs and notes, were subjected to a thematic analysis and compared to the literature.
Summary of results: One group of teachers identified common ground with their students regarding the importance of interactivity, constructive alignment, communication and inspiration. Another group felt that while students may value activating teaching methods and clinical relevance they felt that for teachers were course structure and faculty teamwork most important. However, in the discussions teachers changed their views. Reflecting on the importance of questioning their assumptions regarding effective teaching, they realized that teachers need to learn as well.
Conclusions: Highlighting discrepancies between how teachers view effective courses and what they believe their students value, teachers realized that the pedagogical theories they were using in their courses could be applied to their own development as teachers. This eye-opening experience could be useful for faculty development.
Take-home messages: Teachers could live as they learn.

8L Short Communications: Simulation 1

8L/1
Integrating simulation into the preclinical curriculum at Ross University School of Medicine

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Background: Over the last 3 years a simulation curriculum has been developed and integrated into the preclinical curriculum at Ross University.
Summary of work: Students experience two simulations in semesters one through four. In semester one a lecture on end-of-life issues was replaced by simulation; Semester two students do an airway lab after learning head and neck anatomy; semester three students run a case of anaphylaxis after studying hypersensitivity in immunology; and semester four students run a GI bleed case while studying gastroenterology. Simulation objectives complement lecture and clinical skills objectives. Formative assessment includes evaluation of teamwork and professionalism, and posttests. In semesters two through four summative assessments is by a simulation station in OSCEs, and MCQs.
Summary of results: Simulations were integrated successfully into eight curricular modules. The simulation on end-of life issues and the airway lab are co-facilitated with behaviorists and anatomists respectively. Posttests show that

students learn during simulation. In CVS physiology the class grade has increased by 7% over classes without simulation.
Conclusions: Curriculum integration of simulation is challenging and requires negotiation between the simulation center and other faculty.
Take-home messages: Simulation reinforces knowledge and gives clinical relevance to the basic sciences.

8L/2
Current and future use of simulation in Australian medical schools

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Brian Jolly *(Monash University, Health Workforce Education & Assessment Research, Melbourne, Australia)*
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Background: Simulation-based education is an important contributor to medical school curricula. Health Workforce Australia (HWA), a national body established to meet the challenges of providing health workforce, commissioned research into the current and future uses of simulation in Australian medical schools.
Summary of work: Diverse methodologies were used, including a curriculum mapping exercise, interviews and focus groups with key curriculum leaders.
Summary of results: All eighteen Australian medical schools participated in this study. Simulation is widely used with variable quality, quantity and timing, reflecting the diversity of medical school curricula and learning environments. Six themes emerged from the data: accepting simulation as part of the curriculum; balancing clinical and simulation education; ensuring simulation is fit for purpose; learning first in simulation; integrating simulation into curricula; and using simulation for interprofessional education. Enablers and constraining factors were identified. Access to resources was a significant factor and in particular, human resources were seen as critical to the development, implementation and evaluation of simulation education.
Conclusions: Simulation is used in all Australian medical curricula, but the extent depends on diverse local contexts.
Take-home messages: Simulation will continue to be a key part of the medical education curricula, but is dependent upon adequate infrastructure and workforce.

8L/3
'Taught one, Simulate one, Do one': Difficulties in transference to clinical practice

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Background: The curriculum for the Foundation Programme in the UK states trainees should be proficient in appropriate practical skills. A compulsory structured simulation programme was established by our Postgraduate Department for procedural skills training for all FY2s
Summary of work: 46 FY2 doctors underwent half-day theoretical and simulated procedural skill (LP, knee aspiration, suturing and che st drain) training during 2010. Anonymous self-assessed paper questionnaires were distributed 6 months later, 26 (57%) of which were returned.Trainees self-reported numbers of procedures performed in the interval, as well as how effective and relevant they perceived the training.
Summary of results: Procedure FY2s successfully performed at 6 months (total 26):
Chest drain: 4(15% respondents)
LP: 12(46%)
Knee aspiration: 4(15%)
Suturing: 18(69%)
One individual performed more of all four procedures than their peers. Trainees self-rate sessions positively with regards to practical ability and relevance.
Conclusions: There is an apparent lack of FY2 exposure to practical procedures 6 months after simulation. Consolidating practical procedural learning curves is difficult without clinical exposure. FY2s perceive simulation as important and relevant. Training should be be targeted to the needs of the individual, not all rotations provide similar practical exposure.
Take-home messages: Simulation training in practical procedures is perceived as beneficial. Training opportunities appear to be available if actively sought. There is the risk of a procedure-naive workforce in the UK. Focussed training and support may be needed to ensure a competent future workforce.

8L/4
Performance Enhancement through Augmented Reflective Learning in Simulation (PEARLS): A mixed methods approach for healthcare simulation debriefing

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Background: Post-simulation debriefing focuses critical performance feedback and promotes reflection. We report on the development of a cognitive aid for debriefing that incorporates a mixed-methods approach to debriefing.
Summary of work: We reviewed the debriefing literature and identified and reviewed various methods and styles of debriefing. The PEARLS Debriefing Script (Performance Enhancement thru Augmented Reflective Learning in Simulation) was iteratively designed and implemented at simulation instructor workshops. Participant feedback informed iterative improvements.
Summary of results: The PEARLS Debriefing Script incorporates scripted language to create a safe learning environment and set expectations. Key elements include: an initial venting of emotions, a description of the main issues, an analysis phase, and a closing during learners apply what they learned for their own context. The choice of methods used during the analysis phase of the debriefing can be adapted to learner group, type The PEARLS Debriefing Script incorporates scripted language to create a safe learning environment and set expectations. Key elements include: an initial venting of emotions, a description of the main issues, an analysis phase, and a closing during learners apply what they learned for their own context. The choice of methods used during the analysis phase of the debriefing can be adapted to learner group, type of learning objective, and setting of the simulation.
Conclusions: PEARLS offers scripted language to guide facilitators in providing honest yet non-threatening feedback and promoting reflection. Future study is needed.
Take-home messages: PEARLS may fill a need for many healthcare educators learning to facilitate debriefings and may augment novice facilitator skills.

8L/5
Applying military medical training models on the training of civilian ambulance nurses

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Background: The pre-mission training of military medical personnel is based on simulation, using either moulage patients or full-scale simulation manikins. Furthermore, the training is preferably conducted in a realistic environment, including the logistic procedures required.
Summary of work: The military approach to medical training has been considered interesting to apply on the postgraduate and continuing education for civilian ambulance nurses. One MD (professor) and one RN (associate professor) are now working part-time for the Armed Forces Centre for Defence Medicine and part-time for the University of Borås. A general aim is to improve the trauma education for civilian ambulance nurses, including prehospital procedures for

command & control, and by introducing selected military techniques such as tourniquets and haemostatic agents to stop life-threatening bleedings also in civilian practice.
Conclusions: We have a reason to believe that this recently initiated collaboration between military medicine and civilian prehospital medicine is mutually beneficial. The civilian Emergency Medical Services will become better trained and prepared, while the Armed Forces are likely to get a larger recruitment base of skilled medical personnel for future service in international missions.
Take-home messages: Collaboration between organisations with similar interests, in this case the prehospital management of trauma victims, is likely to be mutually beneficial.

8L/6
Do instructors' differences influence students' life support evaluation?

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Background: Basic Life Support (BLS) and Advanced Cardiac Life Support (ACLS) are goal-oriented, structured courses designed to improve quality of Cardiopulmonary resuscitation. The Faculty of Health Science, University of Beira Interior instructors group is composed by 2 nurses (N), 3 graduated assistants (G), and 7 residents (R).
Summary of work: 804 students were enrolled in BLS and 183 in ACLS. Theoretical evaluation data was analyzed, as students´ instructors´ evaluation, according to Communication Skills and Ability to Interact, by a 5 point Likert Scale to look for differences regarding instructors.
Summary of results: BLS: Theoretical evaluation means distributed by instructor´s professional group were: (N) 92,42%; (R) 90,01%; (G) 89,33% - no significant statistical difference. Communication and Ability to interact means were: (N) 4,95/4,95; (R) 4,82/4,86; (G) 4,81/4,91, no statistical significance between groups. ACLS: Theoretical evaluation means: (N) 93,90%; (R) 95,17% and (G) 91,45% not statistically significant. Communication and Ability to interact: (N) 4,57/4,57; (R) 4,83/4,89; (G) 4,68/4,68, no significant statistical difference.
Conclusions: No difference has been found among theoretical evaluation grades, as well as subjective instructors´ evaluation by the students regarding instructors' groups.
Take-home messages: Instructors´ grade of expertise in structured and objective courses (BLS, ACLS) didn´t seemed to influence students´ outcomes.

8M Short Communications: Patient Safety

8M/1
An interdisciplinary teaching intervention targeted at medical error: A descriptive report

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Background: Health providers are becoming more sophisticated in the way adverse events are reported and measured and there is a growing need within medicine to convert this information into practical interventions to reduce the recurrence of common errors.
Summary of work: We describe an innovative teaching session aimed at undergraduate health care professionals from a range of disciplines to address commonly identified patient safety themes identified within the hospital setting. The cohort included final year medical, nursing, physiotherapy, radiology and occupational therapy students alongside trainee health care assistants totaling over 150 students over 2 days. Themes included: inpatient falls; discharge planning; infection control and prescribing error.
Summary of results: Qualitative data obtained suggests the days primary objective of fostering greater situational awareness by providing insight into the thoughts, roles and preconceptions of other members of the multidisciplinary team was achieved.
Conclusions: Interdisciplinary teaching poses an attractive mechanism to act on patient safety reporting data.

8M/2
Teaching Patient Safety Awareness in the UME Curriculum through Simulation

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Background: Third year medical students were targeted for an intensive Patient Safety Curriculum developed at the VA Hospital. The clerkship rotates 30 MS IIIs every three months, 10 students/month rotate through the VA hospital.
Summary of work: Using tracer methodology, each student examined an adverse event involving a common hospital processes with a high impact on patient safety and quality of care. Each learner recorded observations during a simulation activity and noted vulnerabilities. Additionally, MS IVs served as control group as they did not receive the curriculum. The two groups were compared to measure knowledge, skills and attitudes towards recognizing patient safety vulnerabilities.
Summary of results: Initial observation demonstrates the students receiving the extensive curriculum intervention have shown a significant improvement of their awareness of patient vulnerabilities than the control group.
Conclusions: We have found there is some reluctance to embrace the tenets of the patient safety content in situ. Additional data supports the need to include both residents and attendings to reinforce the critical need to recognize patient vulnerabilities to increase quality of care.
Take-home messages: The understanding and recognition of systems and patient vulnerabilities is a critical need in the hospital setting. Teaching an aggressive patient safety curriculum is one method to begin to increase this awareness.

8M/3
Teaching patient safety in medical students during clinical clerkship years in Bhumibol Adulyadej Hospital, Bangkok, Thailand

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Background: There is increasing pressure for healthcare professionals to deliver evidence based service to patients while maintaining their safety in an era of increasing service demands. Medical students must be prepared to manage these challenges. In the past, patient safety was taught by a lecture on the risk management system of the hospital. We realized that lecturing is not effective in fostering change in practice and attitude, especially in safe practice.
Summary of work: A half-day workshop for medical students on patient safety using the WHO patient safety training material: Learning from errors was conducted. A pretest and posttest of a patient safety survey was done and the students are asked to rate the workshop and made suggestions for improvement.
Summary of results: The students showed more understanding in patient safety concept after the workshop. Several suggestions for improvement were given. The workshop has a positive impact on students' knowledge and attitude on patient safety. Long-term follow-up should be done to determine students' attitude change over time.
Conclusions: Medical students can be taught about patient safety through a workshop using resources from the WHO patient safety programme.
Take-home messages: Knowledge about patient safety is important for medical student in fostering safe practice and improved patient outcomes in healthcare.

TUESDAY 28 AUGUST 2012

8M/4
The simulated ward: helping students become safer doctors

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Background: Medical error continues to harm patients despite significant efforts to improve patient safety over the past ten years. This initiative aims to develop and implement an intervention based on the World Health Organization's Patient Safety Curriculum Guidelines.
Summary of work: We designed a series of authentic clinical scenarios, reflecting common encounters experienced by newly graduated doctors, with Final Year medical students participating in the role of intern. Students reflected on the experience, were given feedback and voluntarily completed an anonymous evaluation form.
Summary of results: Over 130 students have participated to date. Evaluations have been positive with 90% agreeing/ strongly agreeing that it was a valuable experience, which they would recommend to their peers.
Conclusions: Ward Simulation is a promising, safe and low cost curricular development in undergraduate medical education. This model is transferable worldwide and has the potential to improve patient safety outcomes by reducing medical error.
Take-home messages: Many of the errors and solutions described in the literature relate to systems errors. A newly qualified doctor has very little influence over systems or systems errors. Our project aims to equip newly qualified doctors with the skills they need to practice in a safe manner while protecting both themselves and their patients from error.

8M/5
Evaluating Patient Safety Competencies during Clerkship using OSCE: a five year experience

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Background: Regarding Patient Safety (PS), continuous education is considered essential to promote a cultural shift that mitigates the name-and-blame-culture and reinforces teamwork and system approach. OSCE is a powerful tool for evaluating PS-skills. In 2007, a PS-program was first introduced in our two-year-clerkship. At the end, a multidisciplinary OSCE was performed, including a PS-station. We aimed to compare the performance of students in a PS-OSCE station five years after the introduction of our PS-program.
Summary of work: The PS-scenario included situations like medication errors, communication failures, administrative problems or procedure flaws. A specific PS-checklist, to be completed by the standardized-patients, was developed by our group(Daud-Gallotti et al, 2011). Students' performance in 2007 and 2011 were compared.
Summary of results: Since 2007, more than 1400 students completed our PS clerkship program. Comparing students' performance, we observed an expressive improvement in all evaluated items. The total "ME domain" performance increased from 78% to 90%; "asking for apology" improved from 57% to 95% of students; "the situation would be analyzed" raised from 59% to 85% (p<0.05).
Conclusions: After five years, a significant improvement in students' performance was observed.
Take-home messages: Take home A continuous PS program and evaluation was very effective, reinforcing that "assessment drives behaviour".

8M/6
Comprehensive Learning Effects of a Course on Patient Safety

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Background: Improving patient safety is an extremely relevant topic in medicine. Training may contribute to limiting unsafety, but effects are often only evaluated on the lower levels of learning as defined by Kirkpatrick.
Summary of work: Effects of a course 'Patient Safety' for residents (N = 29) were longitudinally measured on all four levels: satisfaction with the course, attitudes towards patient

safety, behavioural intentions on communicating about errors, and patient safety culture in the own department.
Summary of results: Attitudes improved during the course, but effects disappeared three months later. Behavioural intentions changed over time with also long-term effects, especially on increased reporting unsafe situations in an error reporting system, but less on discussing errors with patients or supervisors. No effects on organisational level were found.
Conclusions: Evaluating the training on different levels showed differential effects. Long-lasting effects of a course on patient safety can be reached, although not yet on all levels. Behavioural intentions changed because of the course, but future research is needed for reaching sustainable effects on attitudes and affecting organisations.
Take-home messages: Evaluating a course on different levels of measurement improves insight in its effects, pointing to specific areas that need improvement in the course design.

8M/7
Improving patient safety and compassionate care of the older person: an original simulation based whole team training course

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(Presenter: **Nicola J Morgan,** Simulation and Interactive Learing (SAIL) Centre, Kings Health Partners, St Thomas House, St Thomas Hospital, Westminster Bridge Road, London SE1 7EH, nickimorgan@nhs.net)

Background: Care of the older person is a national focus within the UK. Media reports of substandard treatment have highlighted the need for better training in basic issues of patient safety and compassionate care.
Summary of work: Staff from the elderly care unit in an inner city teaching hospital were given the opportunity to take part in an originally designed two day simulation course. High fidelity and ward based scenarios were utilised with a mixed-method evaluation.
Summary of results: Observations showed enjoyment of the course but anxiety and apprehension about the simulation environment. Thematic analysis of interview data showed learning in teamwork and reported improvements in patient care. Staff self-confidence improved after human-patient simulation (t= 9; df = 56; p<.001) and ward based exercises (t= 9.3; df= 76; p<.001).
Conclusions: Measures of participants' reactions, post-course self-confidence and transfer of skills into practice showed that the programme had an overall positive effect. There was reported improvement in team working and communication and also empathetic and sensitive

communication with patients and relatives, providing dignity and privacy in personal care.
Take-home messages: Simulation is an effective method for encouraging dignified care and compassion for older persons by teaching non-technical skills with a focus on team skills and empathetic and sensitive communication with patients and relatives.

8N Essential Skills in Medical Education Assessment (ESMEA Course): (Closed Session)

8O Workshop: Survey design in health professions education

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Background: Surveys are one of the most commonly used research methodologies in health professions education (Gehlbach et al., 2010). Unfortunately, few educators are familiar with the best practices of survey design.
Intended outcomes: (1) Recognize how to use a systematic, 7-step design process (Gehlbach et al., 2010); (2) Describe how to define the educational construct to be studied; (3) Demonstrate how to develop a set of items to characterize the selected construct; and (4) Define the purpose of expert validation, cognitive interviews, and pilot testing.
Structure: The initial portion of the workshop will feature a brief lecture on the 7-step process. Next, the group as a whole will develop and define various constructs relevant to health professions education. Once constructs are defined, small groups will work together to develop an appropriate survey scale to assess a specific construct. Emphasis will be placed on identifying common mistakes that occur during the item-writing process. Finally, lessons learned from the small-group activity will be shared and instruction will be given on the benefits of expert evaluation, cognitive interviews, and pilot testing.
Who should attend: Medical education professionals interested in learning how to create valid and reliable surveys that can be used as research tools in health professions education.
Level of workshop: Intermediate.

8P Research Essential Skills in Medical Education (RESME Course) (Closed Session)

TUESDAY 28 AUGUST 2012

8Q Workshop: Faculty Development for Interprofessional Education: Producing an integrated curriculum with educational enhancement

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Marilyn Hammick, Consultant Best Evidence Medical Education, United Kingdom
Sarah Hean, University of Bournemouth, School of Health and Social Care, United Kingdom
Cath O'Halloran, University of Huddersfield, Health Sciences, United Kingdom
Deborah Craddock, University of Southampton, Faculty of Health Sciences, Southampton, United Kingdom
Derek Cox, University of Leicester, Staff Development, Leicester, United Kingdom

Background: Interprofessional learning (IPL) is now expected within medical and healthcare curriculum. We ask whether staff development and the concepts of interprofessional education (IPE) are fully understood. The workshop question: How do you ensure and sustain a quality aligned IPL strand within a medical curriculum?
Intended outcomes: A workshop agreement on what constitutes a sustainable IPE curriculum for healthcare professions, including staff development and leadership; solutions for ensuring quality when integrating IPL within curriculum.
Structure: Interactive small group tasks to explore the challenges for IPE quality assurance relating to: • Integration: discussions will focus on the integration and alignment of relevant IPE teaching, learning and assessment and, the design of a curriculum plan to prepare future doctors for collaborative practice. • Staff development: ensuring the right attitudes and commitment for IPE among those who teach; the skills necessary to support IPL and how these skills might be developed and nurtured; training and development possibilities for ensuring quality. • Leadership: roles for doctors and other practitioners underpinned with scholarship in teaching and learning combined with profession-specific evidence-based knowledge concerning collaborative healthcare practice. Examples from published work will be shared.
Who should attend: Educators and clinicians with curriculum and IPE responsibilities.
Level of workshop: Intermediate.

8R Workshop: How to Teach Medical Error Prevention

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Background: Medical error is a leading cause of death, primarily caused by cognitive mistakes and shortcuts, both individual and systemic. Error prevention strategies must address cognitive processes, so healthcare professionals understand where errors arise. All patient pathways have key decision points. A poor decision at these risks a poor outcome. These points can be identified and faulty cognitive processes at each addressed. There are 10 basic medical errors. Practitioners can identify them in scenarios, tutorials and clinical practice. Following on from a successful workshop at AMEE 2011, we have developed regular medical error avoidance sessions in our institution and regionally to teach error identification and avoidance. These have been paralleled by a reduction in actual errors.
Intended outcomes: Building on experience from these sessions, this workshop teaches participants the roots and types of medical error. Those present will be able to identify errors in scenarios and their own cases. Attendees will leave with the tools to teach error avoidance to others.
Structure: Introduction; Medical error: Cognitive not Intellectual - Interactive Lecture; Types of medical error - Interactive Lecture; Identifying errors - Group activity; Spotting errors in real cases - Small groups; Feedback from groups - Group discussion; Identifying decision points in actual cases - Small group; Teaching others - Interactive talk/video; Discussion; Feedback.
Who should attend: Medical educators; healthcare practitioners; mentors.
Level of workshop: Intermediate.

8S Workshop: Improving the reliability of Multiple Mini Interviews: lessons learned from collaboration

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Margaret Cupples, Queen's University Belfast, General Practice, Belfast, United Kingdom
Jon Dowell, Dundee University, Medical School, Dundee, United Kingdom
Muriel Shannon, St George's University London, Haematology, London, United Kingdom
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Adrian Husbands, Dundee University, Medical Admissions, Dundee, United Kingdom
Aileen O'Brien, St George's University London, Psychiatry, London, United Kingdom

Background: Multiple Mini Interviews (MMIs) now form a major part of the admissions process in Queen's University Belfast, Dundee and St George's University medical schools. Although much of the development and implementation of the MMIs is similar between these Universities, there are differences, which must account for the significantly different Cronbach's alpha (CA) between sites. What factors might affect this variance in reliability and what lessons can be learned to benefit other Universities using MMIs worldwide?

Intended outcomes: For representatives from each medical school present to exchange ideas and learn from the experience of Queen's University Belfast.
Structure: Beginning with a short introduction we will invite volunteers to take part in three mock five-minute Mini Interviews examining a range of non-cognitive skills. Group discussion between cases will focus on candidate and examiner experience as well as the ability of the station to discriminate between candidates. Then a brief summary of the evidence in this field will be presented before a creative session will ensue with the opportunity to design new stations for the 2013 entry Queen's MMIs.
Who should attend: Anyone interested in or involved with the medical school application process and/ or medical school OSCEs.
Level of workshop: Intermediate.

8T Workshop: Before You Make that Decision: Understanding Bias in Decision Making

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Background: Dangerous biases can creep into many critical decisions and strategic choices, including in critical medical decisions. However, concepts in decision making and methods to limit impaired decisions may not be included as part of medical training. The format of this workshop will be to break into small groups and begin with a case which forces participants to make a decision. After this four key decision heuristics will be discussed with ongoing group participation.
Intended outcomes: Participants will gain understanding of the dynamics of decision making in situations with complex and uncertain information. A checklist for methods to improve decision making will be discussed.
Structure: This workshop is built around a case in which a decision must be made in uncertain conditions. After this four of the most common decision heuristics will be reviewed. The session will be interactive drawing from the initial case and a series of questions that will help participants understand the biases that affect decision making.
Who should attend: educators designing teaching, learning or assessment exercises.
Level of workshop: Intermediate.

8U Workshop: When GPS won't do: Meaningful Curriculum Mapping

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Background: The success of medical education across all learner levels depends on the development, administration, and evaluation of curricula. A curriculum is more than a list of topics or objectives. It is constructed of all the experiences afforded to learners that enable them to reach their objectives. Curriculum mapping is a planning and communication tool which can guide educational managers and learners while also allowing adaptation according to preferences of teacher and student. The spectrum of opportunities for effective curriculum mapping is wide, ranging from design of an academic lecture series to development of an entire undergraduate medical education curriculum. Meaningful curriculum mapping is the mandate of educators involved in all aspects and levels of medical education.
Intended outcomes: 1. Participants will have a better understanding of the principles of curriculum design. 2. Participants will be able to design a curriculum map for all components of an educational program, including a curriculum blueprint linking competencies and objectives with educational strategies and assessment tools, and a strategy for program evaluation and renewal.
Structure: Interactive workshop. Following a didactic session, small groups will develop a curriculum map from examples provided by the facilitators, and/or their own curriculum development needs. A final group session will review progress and share strategies.
Who should attend: Faculty interested in curriculum development at all levels.
Level of workshop: Intermediate.

8V Meeting: MEDINE2 WorkPackage 5 and WorkPackage 6 (Closed sessions)

8W Posters: eLearning Case Studies 1

8W/1
Software Tools Applied to Clinical Practice Education

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Background: The teaching of technical parts in medicine is as
important as the humanitarian nowadays. Students of
biomedical engineering represent the future of non-medical
hospital employees who also directly contribute to the quality
of health care.
Summary of work: The aim of this paper is the presentation
of developments in teaching medical data processing
together with the basics of cardio-physiology and cardio-
anatomy. It describes the methods used for teaching students
at VSB-Technical University of Ostrava.
Summary of results: The software application, ImplantSys,
has been developed for educational purposes. Therefore the
students can learn about the problems of developing such
applications, medical measurements, data transfer, their
storage, processing and visualization. Several lessons in two
courses that combine technical and medical practice are
prepared. The lessons are focused on the whole process of
medical data acquisition and designing the software.
Conclusions: The students gain experience with real medical
measurements using vital signs monitors DASH or EAGLE.
They also learn how to implement a system that processes
bio-data. All of this contributes to the improvement of non-
medical specialist education and therefore strongly affects
health care.
Take-home messages: Recommendations are: The
realization of difficult measurements in lessons contributes to
clearer issue understanding. Also a "hands-on" approach to
data is more memorable for students.

8W/2
Intelligent design of virtual microscopy classes

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Background: Virtual microscopy is increasingly being used in
(bio)medical education. However, pedagogical knowledge on
how to design virtual microscopy classes to make optimal use
of its possibilities, is lacking.
Summary of work: Pedagogical knowledge on virtual
microscopy was obtained by literature study, think-aloud
experiments with experts and students, and interviews with
teaching staff. This led to a new approach to teaching

microscopy: classes were developed using the assessment
tool in the virtual learning environment Blackboard with links
to the slides in the virtual microscopy software Slidebox. The
assessments included feedback and annotations aiming to
guide students in examining microscopy slides. Annotations
indicating areas of interest on the slides were used to ask
specific questions. This approach was evaluated in several
pilots. Microscopy classes were taught in a classroom setting
and students could access all course material online for self-
study as well.
Summary of results: Students' evaluations of the pilots
showed that the online assessments improved microscopy
classes. The use of questions and annotations stimulated
students to interpret their observations and to deepen their
knowledge. Students indicated the classes could be further
improved by including more detailed feedback.
Conclusions: Online assessments including feedback and
annotations improve virtual microscopy classes.
Take-home messages: Virtual microscopy offers new tools to
stimulate students' learning.

8W/3
Zooming in on (virtual) microscopy class: what goes on in the mind?

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Background: At the UMC-Utrecht virtual microscopy is used
for histology and pathology training of (bio)medical students.
How experts and students examine virtual microscopy slides
and what difficulties they encounter solving a microscopy
assignment is unknown. Insight in the cognitive process can
help to improve microscopy education.
Summary of work: Experts (pathologists) and second-year
medical students were asked to think aloud while solving a
microscopy assignment using virtual microscopy. Sessions
were audio-taped, transcribed and encoded. Strategies used
to solve the microscopy assignment were identified.
Summary of results: All experts followed a similar,
structured routine to solve the assignment, making use of an
array of microscopy skills including orientation, pattern
recognition and functional interpretation. Elements of the
expert-routine were also applied by students, however in a

less structured manner. Major differences were seen between students, and between students and experts in mastery of skills.

Conclusions: To increase virtual microscopy learning outcomes, students should explicitly practice the routine and skills used by experts to solve microscopy cases. We therefore suggest to introduce specific questions, feedback and annotations addressing expert strategy to virtual microscopy classes.

Take-home messages: Think aloud experiments are a useful tool for the (re-)design of practical classes.

8W/4
Histopathology image identification and description by medical students: Use of E-learning tool for better understanding

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Background: Medical students are not trained to be Pathologists, yet basic understanding of Pathology microscopic images is one of the learning outcomes. Identification and description of histopathological details on a microscopic image is a well accepted difficult exercise for medical students. This knowledge is time and again tested in various exams taken during and after medical course. E-learning has been associated with promotion of student centred and self directed learning.

Summary of work: The study conducted at International Medical University, Malaysia among the 2nd and 3rd year medical students. Curriculum based Pathology microscopic images are uploaded on the web based portal. The students are evaluated before and after the web based learning exercise. The feedback is collected.

Summary of results: A pilot study with small student numbers was done to look at the effectiveness of the design. The results showed overwhelming response and greater satisfaction among the students to describe and identify microscopic images. A larger study (completing in May 2012) is currently been undertaken to look at statistical significance.

Conclusions: Computer based learning using web portal has shown to be popular and proper guidance can be shown to make students understand the difficult areas. E-learning approach has been shown to be better compared to understanding the same content in lectures and images in lab sessions. The results from larger study is thus awaited.

8W/5
Interactive e-learning to improve intravenous fluid prescription skills

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Background: We have developed an interactive e-learning tool to improve understanding of fluid and electrolyte prescription and prescribing skills.

Summary of work: This optional module was developed with information from the BNF, medical textbooks and literature. Students were invited to provide feedback on the module using an online survey.

Summary of results: Data for current academic year is still under progress. Final outcome would be analysed in July 2012. Interim data are as follows: All respondents found the module addressed their learning needs and was easy to navigate through. 83.3% would recommend it to friends. The level of interactivity in the module was deemed excellent by 61.5%. 82.3% described an improvement in their understanding of distribution and composition of body water, indications of different IV fluids, calculation of fluid and electrolyte requirements, and preparation for prescribing as an FY1. All respondents noted an improvement in their knowledge of assessing fluid status and choosing a fluid regime. Data collected showed e-learning, practical sessions and clinical teaching, had similar benefits in facilitating learning on IV fluids, and were better than textbooks and lectures.

Conclusions: Data shows significant improvement in knowledge and understanding of IV fluid prescription following e-learning module.

Take-home messages: E-learning is a simple, easily accessible teaching method which can improve IV fluid prescription knowledge and skills.

8W/6
Use of an Interactive Multimedia Application as Support for Teaching Breast Semiology

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Background: New features providing information technology have been used in medical education. However, scarcity of these features regarding its applicability in the teaching of gynecology is significant.

Summary of work: We developed an application for the teaching of breast semiology using computational resources, made it available on the web and measured the learning of students who interacted with the application. Students from different medical schools were invited. 313 hits were made and 95 users completed the questionnaire. The students could choose two paths: a video of a conventional lecture and interact with it in a linear manner, or a multimedia application, with free interaction. There was also the possibility to access both forms of presentation. The evaluation was composed of twenty multiple choice questions.

Summary of results: Using conventional lecture (CL) led to worse performance compared to multimedia application (MA). However, better results were achieved when both methods were used (CL+MA), (CL = 15.4, MA = 17.5, CL + MA = 17.9, p <0.0001).

Conclusions: Given the evidence presented, we concluded that the use of multimedia application favored learning and the retention of knowledge.

Take-home messages: The traditional method of teaching breast semiology could be integrated with new virtual technologies to innovate medicine learning.

8W/7
Preliminary evaluation of the first year of implementation of e-learning in teaching-learning anatomy in medical students of UNAN-León, Nicaragua

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Background: UNAN-León´s medical school implements a competence-based curriculum, organized in integrated, simultaneous and cyclic modules. Previous students´s testing had revealed weaknesses particularly in reading radiological images and basic medical sciences. In 2011 an additional e-learning in anatomy was introduced, using MOODLE platform, in the 2nd year of medicine.

Summary of work: To evaluate this intervention, an evaluation of intervention type 5 was conducted. An experimental group (25) was randomly selected, for each experimental group´s student, 2 students were randomly selected to form control group (50). The experimental group had access to the on-line course. Focus groups, in-depth interviews, OSPE and practical classes´s grade (regular anatomy assessment) at the end of each rotation were conducted to collect information.

Summary of results: Attendance in OSPE was 94.1% (experimental) and 81.6% (control). Difference in miniOSPE´s average scored was statistically significant (nonparametric test of Mann Whitney), with p=0.003, the experimental group scored 41.1 (SD= 19.3) and control group 32.1 (SD= 23.1).

Conclusions: Experimental group applied knowledge to OSPE better than control group. The evaluation of this intervention provides us inputs to improve the e-learning´s implementation and to enhance anatomy´s educational process.

Take-home messages: It's necessary to change our paradigm in assessment: from evaluating for getting a grase to evaluating for learning.

8W/8
Effect of formative online learning on summative performance in a Pathology curriculum: different impact on school-leaver and graduate-entry students

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Benedict J Canny (*Pathology Board, Faculty of Medicine, Nursing and Health Sciences, Monash University, Australia*)

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Background: Monash University teaches distinct cohorts of school leaver (direct entry) and graduate entry students. The clinical pathology curriculum includes online modules with a formative component. Reminders are sent at the end of the first semester to students who falling behind in their modules.

Summary of work: Performance in pathology summative assessment was compared with weekly online completion of modules. Direct- and graduate entry cohorts were compared.

Summary of results: The direct-entry cohort (n=292) showed a significant (P<0.05).

Conclusions: Direct-entry students who completed online formative modules had better performance, and mid-year reminders had little impact. For graduate entry students, the relationship appears more complex, with some students apparently able to respond to reminders.

Take-home messages: Formative interventions work (online modules and reminders), but the educational background of the recipient may influence their effectiveness.

8W/9
Satisfaction of Dentistry Students with e-Learning

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Background: The aim of our study was to evaluate the results of Czech-English education courses in Dentistry for students of general medicine and to compare students with access to Internet based e-learning courses to those without.
Summary of work: We carried out a retrospective (post-examination) study of 291 students. Students included in our study were divided into two groups: those who took the e-learning program and those who took traditional courses only. The four-point
scale was used for marking: 1 – excellent; 2 – very good; 3 - satisfactory or pass; 4 –unsatisfactory. This was applied to written tests and oral examinations.
Summary of results: It was confirmed that students who had taken e- learning courses saw greater benefits in theoretical and practical training. The e-learning database was easy to operate and users also noted its increased functionalities. The new training system provided valuable knowledge for students' learning, and increased their level of satisfaction. Results were statistically significant in all questions.
Conclusions: It was demonstrated that examination results did not correspond to the type of education but it was confirmed that e- learning helped to prepare students for practical training. The e-learning course had a direct influence on learning experiences, dental information, opinions and comments.

8W/10
Students' behavior in Faculty of Medicine E-learning: A cross sectional analysis

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Background: Being connected to the Internet system allows users to learn from anywhere and anytime. The behavior of students in e-learning may provide information to improve online learning system.
Summary of work: During February 2012, we retrieved e-learning users database from http://e-learning.md.chula.ac.th Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand. The system provides information of users' status, contents viewed and other online users behavior.
Summary of results: Total e-learning contents were 665 lessons. Four hundreds and sixty eight lessons (70.4%) were for undergraduate students, 389 (83.1%) of which were contents in preclinical years. Access to e-learning were 14,716 times. On weekdays, the average access were 472.9 times/day, but increased to 598.1 times/day during

weekends. Most of the accesses (53.4%) occurred between 8 AM to 4 PM, 30.2% after midnight to 8 AM and 16.4% after 4 PM to midnight. Only 272 of 1500 undergraduate students accessed e-learning. Most were first year medical students (67.3%). Average access frequency was 43.8 times/month (22 times in median). Most of the students (77.6%) accessed the platform from outside the university, 10.7% in the campus and 9.6% from wireless network.
Conclusions: E-learning platform should provide more contents in clinical years to facilitate students' learning.
Take-home messages: Contents coverage may increase e-learning utility.

8W/11
Evaluation of Interactive E-Learning Medical Education In Iran

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Background: Medical schools are expected to provide effective and diversity training to prepare students for work in the community. This paper describes evaluation of an interactive e-learning Medical Education program in diversity education.
Summary of work: Questionnaire, and small group discussions. It used marks, linked to a CD, which measured the educational objectives of the learning at the level of comprehension and application of concepts to real situations.
Summary of results: Students taking part in the evaluation were able to apply the concepts they learned to real context from their own experiences. Type of delivery did not affect coursework marks, but students tended to prefer the e-learning as part of a distance learning package. They offered helpful suggestions to improve its complexity and range.
Conclusions: E-learning in medical education such as this in Iran has great potential, and it would be interesting to evaluate other aspects of diversity education in this way. The acceptability and effectiveness of this e-learning program has been demonstrated, and students' evaluation has provided valuable information for future development.
This research shows that e-learning in Iran medical education adds a useful dimension to traditional learning.

8W/12
Benefits of and barriers to participation in the online professional veterinary network 'NOVICE'

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Background: The NOVICE project is an EU funded online professional network led by five veterinary schools. The network has nearly 1700 members (veterinarians, students and educationalists) from over 60 countries who participate

in a variety of groups and activities including discussion boards, blogs, online chat and wikis.

Summary of work: Members of the NOVICE network were invited to participate in focus groups and to complete an online survey. Questions elicited information about activities, reasons for participation, benefits and drawbacks, and gathered feedback on the website usability.

Summary of results: Focus groups were conducted in the five partner countries and were attended by 48 students and 53 veterinarians. The online survey was completed by 202 respondents. The most popular activities were discussion boards; the main benefit was gaining information in a veterinary professional context; the NOVICE website was largely considered easy to use; the main barriers to participation were time and not knowing others personally. However, more members reported their activity as passive (reading) rather than active (posting / writing).

Conclusions: NOVICE has the potential to support veterinary informal, lifelong learning by providing a secure, professional network and online collaboration, discussion and exchange of information internationally.

Take-home messages: Online professional networks are valuable but barriers to participation should not be ignored.

8W/13
Web based conferencing systems to support problem based learning and group work in radiotherapy

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Background: At the University of Liverpool (UoL), there are a range of methods used to encourage and empower students, and to change the didactic role of the lecturer. Such methods move from a focus on teaching to a focus on supporting learning. In order to add to the blended supportive learning systems in place and as a result of lecturer experience with communicator / conferencing systems to support distance learning, it was decided to pilot a project using such a system.

Summary of work: The presentation will cover the project from idea to fruition and demonstrate how the key features of such a system help facilitate learning across both undergraduate and postgraduate programmes in radiotherapy. The project was in response to student evalaution about financial constraints and academic block timings.In addition, the students and staff can access the system remotely as Adobe Communicator is supported by UoL.

Summary of results: Evaluations from both students and staff are highly positive with particular emphasis on the mutual benefits from remote working.

Conclusions: Due to the positivity from both staff and students about the system, it was decided to support other groups of students and try alternate methods such as supportive group work and literature review sessions. The use of such systems are now used to support particular areas of the curriculum.

Take-home messages: To embrace e-learning / e-supporting culture and look at different working methods to help maximise the student experience.

8W/14
Supporting medicines safety through eLearning

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Background: Training for foundation doctors on medicines safety has traditionally been undertaken face-to-face. To facilitate easier engagement and normal work practice we developed a flexible and interactive online course.

Summary of work: The eLearning comprised four modules: (i) medication safety, (ii) reporting and investigating incidents, (iii) medication incidents involving prescribing (including calculations) and (iv) high-risk medicines. A minimum score of 70% in the post-course assessment was required for successful completion and individual feedback was provided after this test. A post-course satisfaction questionnaire was also completed. Six-months later participants undertook a second assessment in which each participant received a unique set of questions. Scores for the two assessments were compared using a paired t test.

Summary of results: There was no significant different in participants' (n=1169) scores between the initial (mean ± SD 84 ± 7%) and six-month assessment (mean ± SD 83 ± 7%). Feedback was positive for relevance, content and presentation in that 85% of participants scored these at 80% or higher.

Conclusions: Assessment data showed that that knowledge and skills on the safe use of medicines were retained at six months follow-up. The high scores for assessment and evaluation showed the effectiveness and acceptance of eLearning.

Take-home messages: eLearning is effective in ensuring the long-term retention of knowledge and skills on medicines safety.

8W/15
Experiences with two e-learning training exercises by teaching of developmental biology: Molecular aspects of development and Teratogenesis

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Bozena Novotna *(Charles University, 2nd Faculty of Medicine, Institute of Biology and Medical Genetics, Prague, Czech Republic)*
Marcela Klabanova *(Medicentrum, Diana Lucina, Prague, Czech Republic)*

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Background: The traditional lecture-based training of molecular aspects and teratogenesis does not favour needs to develop a set of problem solving skills which will elucidate all details of both topics.

Summary of work: We developed and implemented two e-learning training exercises from molecular aspects of developmental biology and from teratogenesis for the second year of medical undergraduated students in 2009 and 2011. Questionnaire surveys are applied every year after the examination for approximately 150-200 students.

Summary of results: In the evaluation of 135 students, the e-learning training exercise is better than the conventional exercise. In 2011 25.9 % students appreciated the e-learning method as excellent, 63.7% as very good and fecund, and only 10.4 % students had a neutral opinion with personal remarks. No student found the e-learning training in developmental biology as inappropriate. They concluded that the new approach helped them comprehend the relatively difficult objectives of developmental molecular genetics and teratogenesis.

Conclusions: This study shows usefulness of the novel e-learning training method, that encourages self-regulated active learning behaviours and enable to study less details and more embryological coherences
The project was supported by FRVS 222F3A/2011 grant and Diana Lucina.

8X Posters: Interprofessional Education

8X/1
Practical Method for Teaching Interprofessional Teamwork

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Maritta Salonoja (*University of Turku, Department of Primary Health Care, Pori, Finland*)
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Background: Abilities for interprofessional co-operation and teamwork are increasingly needed between health care professional. Since 2005 interprofessional education has been given in Pori Medical Teaching Health Centre, Finland.

Summary of work: In May 2012 a new practical interprofessional patient care model will be introduced for further widening the range of interprofessional medical education. Students of medicine, nursing, physiotherapy and social work form interprofessional teams. Challenging aged rehabilitation patients with multidisciplinary problems are examined by interprofessional student teams using their special clinical know-how under guidance of clinical teachers. IEPS (Interdisciplinary Education Perception Scale) is administered to students. The statistical data on the change of students' attitudes, knowledge and perceptions is presented and patient feedback is evaluated.

Summary of results: The course is ready to be piloted by three student teams in May 2012. Results and analyses will be available in summer 2012, and they will be discussed.

Conclusions: Developing and piloting new practical methods for interprofessional teaching are needed for further applications in health care students' curricula. Experiences and feedback can be used in further developing interprofessional teaching responding to the needs for abilities of interprofessional teamwork between health care professionals.

8X/2
Inohana IPE – Multistep, structured, four-year interprofessional education course

Mayumi Asahina (*Chiba University, Medical, Chiba, Japan*)

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Background: Medical, pharmaceutical sciences and nursing departments of Chiba University have built collaboration to promote multistep, structured interprofessional education(IPE) course since 2007. The students' objectives are to develop their own professional identity and to acquire interprofessional competencies for patient-centered medicine.

Summary of work: This course is a compulsory subject and composed of four steps, advanced parallel to the school year. In each steps, students learn through practice and discussion in small groups. Students learn communication skills and compassion in step1, team building in step2, conflicts and solutions in step3 and interprofessional practice through making a discharge plan in step4. All three departments have about 300 students per one school year. To explore what are difficulties in implementation of this course, we made a contents analysis of the staff journals.

Summary of results: We found several difficulties. One of them is to carry out all 4 steps of the course for a great number of the students, during one year by limited number of faculties. As it is a compulsory course, there are some unmotivated students.

Conclusions: Students develop their professional identity and interprofessional competencies through IPE course. It is necessary to consider difficulties in implementation of the course.

TUESDAY 28 AUGUST 2012

8X/3

An IPE certainly prepares students to become a collaborative practitioner: The evaluation of Interprofessional education in a Japanese medical school

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Background: Interprofessional education (IPE) is important in fostering collaborative practice and in optimizing patient care, but formal evaluation is rarely reported.
Summary of work: This study evaluated educational outcomes of NAIPE (Nagoya University IPE programme). The participants were 74 students (24 medical-, 25 pharmacy-, and 25 nursing students). Medical, pharmacy and nursing students are teamed with each other and the team collaborates to develop a care plan in a half-day case-based session. Trait Emotional Intelligence Questionnaire-Short Form (TEIQue-SF), Jefferson Scale of Physician Empathy (JSPE) and a free-description questionnaire were administrated to participants before and after the programme. TEIQue-SF and JSPE scores were examined using paired t-test and two way repeated measure ANOVA. Free-text comments are analyzed qualitatively.
Summary of results: All of JSPE scores increased significantly. TEIQue-SF score of pharmacy and nursing students increased, but medical students showed no difference. Qualitative analyses revealed that students: 1) deepened their understandings of each profession's role, 2) recognized the importance of sharing information and knowledge, and 3) realized that not only nurses but also doctors and pharmacists consider patient's views.
Conclusions: Outcomes of NAIPE coincided with IPE outcomes recently reported. Students' perceptions have shifted from disease-centered unilateral attitude to a patient-centered collaborative care model. Students deepened their understanding of teamwork, communication and patient-centredness with this programme. They learned the characteristics of integrated team and acquired a collaborative care model. These indicate NAIPE is an effective educational programme for collaborative practice.
Take-home messages: NAIPE prepares students to become a collaborative practitioner.

8X/4

Factors contributing to an effective pre-licensure interprofessional education curriculum for medical students

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Background: Teaching interprofessional education (IPE) competencies to health professionals has emerged as an important factor in fostering collaborative practice. Finding effective and acceptable ways to achieve such competencies presents many challenges to those engaged in pre-licensure programs.
Summary of work: This presentation reports on the impact of IPE on medical education students (in a Canadian university setting) where it is delivered as an integral part of required curriculum. Specifically developed IPE modules were integrated into program courses in collaboration with health professional students and faculty in medicine, nursing, pharmacy and social work programs utilizing a blended learning approach.
Summary of results: Data collected 2005-2011 provided evidence to refine the IPE curriculum and delivery used. It revealed that attitudes toward IPE and teamwork have become more positive among medical education and other students. Also, student feedback strongly supported the use of meaningful case studies, standardized patients and in-class small group discussions
Conclusions: The application of interactive delivery approaches, interaction with a mix of students from other health professions, the use of web-based components to reduce in-class time, and embedding the IPE content within existing required program courses can have acceptable and positive results.
Take-home messages: IPE competencies can be effectively delivered as part of required pre-licensure medical education course work.

8X/5

Key Trends in Interprofessional Research: A Macrosociological Analysis – 1970 to 2010

Elise Paradis (*University of Toronto, Wilson Centre, Toronto, Canada*)
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Background: The field of interprofessional education and practice (IP) research has grown both in size and in importance since the 1970s. In this paper, we use a Bourdieusian-inspired approach and theoretical framework to investigate this growth and the changing nature of the field's research by looking at publication trends both at the aggregate (field) level and in its key texts. Bourdieu is a French sociologist who wrote extensively about power struggles within the academic field. Academic (sub)fields are seen as historical entities, a network or configuration of objective relations between positions and their associated current and future capital. Publications, as reified scientific production, have a specifically high symbolic value within academia, such that fields can be mapped via an analysis of their publications.

Summary of work: Our dataset consists of 100,488 IP-related articles published between 1970 to 2010. We analyze the evolution of the field – its growth, reach and main areas of inquiry – by coding the title of its publications with a computer program and a set of 436 inductively-generated codes and 202 country codes.

Summary of results: Controlling for the number of articles published annually, we found substantial growth (2,293%) in the number of IP-related publications over time. We also found a broadening reach of IP-related research, from publication in 209 journals in 1970 to 2,867 in 2010 (1,272% growth). We note the rise of managerialism in the IP literature, the dominance of the psychometric paradigm, the recent growth of qualitative research and theory-driven inquiries, and language maturation in the field.

Conclusions: These results demonstrate that the field of interprofessional education and practice research has successfully used academic vehicles and criteria to gain recognition as a legitimate area of scientific inquiry.

Take-home messages: To further this macro-sociological research, scholars could address the micro, day-to-day actions of IP researchers as they work to legitimate their own work within non-IP dominant departments.

8X/6
Making birds of different feathers flock together: Common skies for interprofessionalism

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Background: Collaboration between doctors and nurses are crucial for high-quality care. Despite substantial resources invested to promote interprofessional collaboration, we are still some distance away from experiencing its full potential.

This study investigates some of the fundamental reasons behind the paucity of interprofessional collaboration.

Summary of work: We conducted 112 hours of observations of doctor-nurse interactions, and 42 semi-structured interviews with doctors (n=20, avg=52mins) and nurses (n=22, avg=70mins) of varying seniority. Observation data were triangulated with interview data, which were transcribed (1021 pages), thematically analyzed, and triangulated with observation data.

Summary of results: The lack of collaboration between doctors and nurses is mainly because they do not share the same realities. Their realities are driven apart by variability in care practices, division of labor, and characteristics of clinical situation.

Conclusions: Collaboration issues between doctors and nurses are systemic issues that require systemic solutions. Several parts of the system need to be tweaked at once for initiatives to have a higher probability of success.

Take-home messages: According to sociologist William Thomas, "it is not important whether or not the interpretation is correct – if men define situations as real, they are real in their consequences." For doctors and nurses to share similar realities, interprofessional education, we argue, is an inevitable step.

8X/7
Students' experiences of collaborative knowledge creation activities – during and after an interprofessional training ward (IPTW) course

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Background: Enabling collaborative knowledge creation activities for improved teamwork is one of the key goals during an IPTW course. We have previously described students' experiences of their academic emotions, e.g. feelings of stress related to clinical interprofessional studies, based on data collected continuously via mobile phones by using the Contextual Activity Sampling System (CASS). The aim of this study was to gain deeper understanding of how students collaboratively create knowledge during an IPTW course as reported via CASS.

Summary of work: Quantitative and qualitative data were gathered five times a day during the two week IPTW course by using CASS and were compared to open-ended questions obtained from interviews performed at the end of the course.

Summary of results: The preliminary results showed that students acquired an understanding of the importance of team communication and collaboration. The CASS data gave somewhat different and unique information compared to the interview data.

Conclusions: This study might lead to a better understanding how to improve collaborative knowledge creation activities in clinical IPE settings regarding students' requisites.

Take-home messages: The CASS methodology captures students' experiences in context and thereby provides unique data that can enhance collaborative knowledge-creation activities in clinical IPE settings.

8X/8
Inter-professional Training with Standardized Patients - Even a Less-than-optimal Student Mix Can Work

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Background: Since "working together necessitates learning together" health profession schools try to implement Inter-professional Education (IPE). Frequently such programs are hampered by logistic and political barriers and it is difficult to bring together students in groups that most closely resemble typical healthcare teams.

Summary of work: The Sophie Davis School of Biomedical Education (SDSBE) includes a BS/MD and a Physician Assistant (PA) program. Despite co-location and shared administrative oversight, students have not had prior opportunities to learn together. This full-day program consisted of a lecture and panel on the Patient-Centered Medical Home and Team-Based Care as well as a small group Standardized Patient (SP) exercise. The latter addressed the biopsychosocial aspects of diabetes and cardiac disease with a 3-visit case roll-out.

Summary of results: Students from both programs demonstrated significant learning gains as evidenced through pre- and post-intervention surveys and narrative responses. Faculty and student program evaluations revealed a strong desire to expand the exercise and make IPE a routine element of each training program.

Conclusions: Despite initial concerns about medical and PA students not being optimally matched in terms of clinical experience and complementary clinical responsibilities this program proved beneficial to all involved.

Take-home messages: Students' desire for IPE is strong – move ahead even if conditions are not optimal.

8X/9
Assessing the impact of the workshop for collaborative practice (CP) by analyzing participants' action plans

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Background: It is important to promote interprofessional education and collaborative practice (CP) within the healthcare professions. The advantages of CP were perceived as: to break down the barriers between the professions, to develop a culture of mutual respect and understanding, to promote a team approach towards work, to promote shared leadership, and to promote the cultural acceptance of the different professions (Report of the meeting of the WFME Task Force, 2010). To prepare the settings of CP, we held a workshop and facilitated the participants to develop individual and specific action plans.

Summary of work: 29 healthcare professions (19 pharmacists, 5 faculty, 2 nurses, 2 medical doctors, and one nursing staff) attended the one-day workshop. They discussed what is essential, what are the barriers, and what is the strategy to facilitate effective CP. They established their action plans. These were analyze and the impact of the workshop assessed.

Summary of results: The participants presented 94 action plans (3.2+/-1.7 per person). They were categorized into seven fields; 23 plans for facilitating communication, 18 for educational activities, 14 for daily practice, 13 for self learning, 11 for sending information, 9 for system organizing, and 6 for research activities. Most of the plans could be connected to the outcomes previously perceived.

Conclusions: We can demonstrate seven fields of action plans with respect to implementing CP.

Take-home messages: A multidisciplinary workshop may be a effective strategy to enable individuals to find the way to developing CP.

8X/10
Elderly health multiprofessional residence: building an interdisciplinary curriculum

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Background: The Brazilian aging population gives us a challenge in training different health professional to work as a team. The aim is to training health professionals to deal with the specificities of elderly care in the face of growing social demands in service delivery and public policy.
Summary of work: The construction took place over two years in partnership between different staffs from elderly care center and health professionals from each specialty. They built the profile of egress, general and specific skills of each professional area, practice scenarios, an evaluation instrument, and selection process.
Summary of results: Residents of nursing, physiotherapy, nutrition and social service are organized into multidisciplinary teams, with an interdisciplinary perspective to practical activities, encouraging dialogue, understanding the role of each professional area and its importance to the treatment plan proposed for the elderly. The evaluation methodology is based on the residents of common issues between the different areas.
Conclusions: The knowledge, skills and attitudes articulation from health professions into an interdisciplinary work, dealing with political, economic and social context that is the proposal of this program will contribute to the care and life quality of elderly population.
Take-home messages: The training of interdisciplinary health professional's teams is the core action to deal with population health demands.

8X/11
Looking beneath the surface of professional practice

TP Newson (*East Kent Hospitals NHS University Foundation Trust, Paediatrics, Canterbury, United Kingdom*)

(*Presenter:* Dr TP Newson, East Kent hospitals University Foundation NHS Trust, Paediatric Department, Kent & Canterbury hospital, Ethelbert Road, Canterbury, Kent CT13NG, United Kingdom, tim.newson@ekht.nhs.uk)

Background: Objective: To assess what themes and knowledge of professional practice were explored when differing small professional groups used critical incidents as a basis for discussion and development of their practice.
Summary of work: Design: Ethnographic study using standard methods [participant observation, videotape, and semi-structured interviews] with analysis to reveal themes related to professional practice; a map of practice knowledge to assess knowledge; and interview responses to evaluate participant's views. Setting: District general hospital. Participants: Three groups with doctors alone and two mixed with nurses. Each group had four to six participants which included myself as facilitator.
Summary of results: The groups explored a wide variety of themes related to professional practice most frequently assumptions and beliefs but also feelings, attitudes and values i.e. implicit and tacit knowledge. Prominent issues discussed were regarding emotion and interprofessional relationships The practice knowledge identified, reflected the themes, with sensory, practice related and experiential knowledge most frequently discussed and evidence based

knowledge least discussed. The participants felt the sessions were useful; thought provoking; had provided new perspectives and in some improved situational awareness. The interprofessional group provided more differing perspectives, experience and positive professional attitudes than shown in the doctors' group. All participants expressed a lack of arenas to discuss professional issues.
Conclusions: Critical incidents seem to help groups of paediatric doctors especially when interprofessional make visible the implicit and tacit aspects of professional practice.
Take-home messages: Small groups using critical incidents can have an important role in helping trainees look below the surface of their professional practice.

8Y Posters: Health Promotion and Public Health

8Y/1
Preventive Cardiology: An Innovative Medical Curriculum Development

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Background: The General Medical Council recommend UK undergraduate medical curriculum include population health and preventive medicine. A module on Preventive Cardiology was designed for the Clinical Epidemiology Intercalated BSc.
Summary of work: Using mixed methods of teaching, cross-department collaborations helped deliver multiple concepts of prevention. Practical skills of Motivational Interviewing (MI) and Shared Decision Making (SDM) were taught using a simulated patient. Summative written case-study and a 2-station OSCE and formative pre and post-MCQ, along with online surveys, helped evaluate the students' knowledge, skills, attitudes and understanding.
Summary of results: Knowledge improved from an average 53% (pre-MCQ) to 74% (post). All eleven students rated the module 'high' or 'very high' according to, for example, 'likelihood of applying what they had learnt'. Thematic

analysis of free-text responses identified, for example, appreciation of the greater need for preventive cardiology, and appreciation of how MI and SDM help put prevention into practice.

Conclusions: Undergraduate curricular developments can be turned into opportunities to expand the role of preventive medicine, for example in the form of stand-alone modules. An effective curriculum should also offer sophisticated communication skills for prevention (e.g., MI, SDM) and appropriate assessment methods.

Take-home messages: Develop and appropriately assess stand-alone modules to teach relevant prevention principles including sophisticated communication skills.

8Y/2
Health Promotion in Teaching and Practicing

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Background: Generally, every patient's caring and every medical subject's training might integrate health promotion (HP) with its practice, seamlessly. However, the majority of specialists couldn't apply HP concepts to their practice.

Summary of work: To find the factors that affect the practice and teaching of HP with their specialist practice. Created a questionnaire which had characteristics of 105 medical teachers about type of specialist, duration of practice since graduation, experience of HP Subject teaching and practice with HP principles, teaching methods which are integrated with health promotion.

Summary of results: 68 questionnaires were replied (64.8%). 1.All teachers were specialists of whom nearly ¾ had more than 5 years teaching experience, but only ¼ were teachers of a HP subject. 2.The specialists who were teachers of a HP subject had high competency to combine HP principles with their practices and teaching, significantly. 3. Role Model is the method which is most commonly practiced in medical teaching.

Conclusions: The strategy can promote the participation in the HP block or integrate it in their career path to improve patients' caring and the role of medical teacher.

Take-home messages: Teachers who participate in the HP block have high competency to combine HP principles with their work.

8Y/3
Public health in a global world: advocacy, sustainability & ecology

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Background: Public health is often perceived by students as dull and even irrelevant. Feedback at our institution was reviewed and was poor. A re-conceptualisation of the content and learning outcomes within this important theme is leading to radical change

Summary of work: A new set of learning outcomes were derived that included: global health, advocacy, sustainable healthcare and ecology, health inequalities and health promotion. These learning outcomes are being translated into curriculum innovations at many levels

Summary of results: Case-based, inter-professional and experiential learning is driving a new curriculum that revises much of the old and includes completely new material under the title "Population Health". Community experiences and humanities/arts based approaches are included.

Conclusions: There is a new era in public health in response to new thinking on social determinants of health, new evidence on sustainable healthcare and climate change and new relationships between clinicians and populations (advocacy, health promotion and health inequalities). Public Health teaching must respond.

Take-home messages: A population health approach is needed as part of all clinical encounters. It is exciting to learn and teach and integrates across the curriculum at many levels

8Y/4
An evaluation of Public Health placements for General Practice specialty training

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Background: There is a lack of understanding of PH issues by GPs. What is the perception of such posts by trainees / trainers, is the learning experience suitable, and do PH placements change the attitudes of to public health?

Summary of work: The research questions were addressed by a literature review, an online survey of trainees, semi-structured interviews of trainees on public health placements and all other trainees in year 3, and telephone interviews with placement supervisors and with third year GP trainees. West Midlands, England.

Summary of results: The 4 areas of evidence were positive about PH placements. Trainers and trainees regarded all PH areas important particularly health promotion and disease prevention. Placement trainees had a greater understanding of population issues, commissioning, rationing and wider

health service. PH trainers valued GP trainees. 90% of trainees thought PH placement should be maintained or increased. Improvements suggested: more practical work, more structure, wider PH experience. Lack of clinical work caused problems with workplace based assessments. Trainees without PH experience cited gaps in their knowledge: health promotion, health improvement, commissioning and what happens in PH.

Conclusions: Trainees were positive about PH placements, important areas of GP curriculum met. Improvements in induction materials and assessments recommended.

Take-home messages: Public health experience is good for future GPs.

8Y/5
Societal commitments, self-image and personal aspirations: Views and perceptions of Chilean medical students

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Background: The School of Medicine University of Chile faces two major challenges: the pursuit of excellence in medical education and the accomplishment of its historical mission "to contribute to the social development of the nation". This qualitative study investigated medical students' self-image, societal commitments and personal aspirations concerning their professional development, with the aim to provide inputs for the planning process of a curricular transition.

Summary of work: First and fourth year medical students participated in a "grounded theory" study, through 22 in-depth interviews and 8 focus groups.

Summary of results: Students' preference for this school relies on ideals rather than pragmatic considerations. They trust that, with a public university, they will expand their understanding and fulfill the social role of the physician. However, this expectation is threatened by the requirement to afford high tuition and the academic burden, that promotes individualism. In their view competitiveness, and not social commitment, drives the students behavior. This also led to their desire to become specialists instead of general practitioner.

Conclusions: Competitiveness is seen as an obstacle to fulfill the mission of the University with the loss of social engagement in the medical practice.

Take-home messages: The students aspire to combine academic excellence with social role, a challenge for our new curriculum.

8Y/6
Social determinants of health and health promotion: creating a comprehensive approach for the senior clinical years

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Background: Fragmented approaches to medical curricula continue as a way of ensuring a topic, be in it isolation or not, is covered. Following a series of pilots, the final 3 years at a large London School now have a comprehensive, integrated coordinated approach to social determinants of health and health promotion (SD & HP).

Summary of work: The paper will describe curriculum changes, including the rationale and the piloting, and the research process underway to evaluate the impact.

Summary of results: Data will be from a range of sources, including qualitative and quantitative student data, routine evaluation data and data from medical teachers.

Conclusions: New curricular content needs to be carefully considered before integration and major changes to teaching approaches and assessment form part of the this dialogue. Perceived difficult topics such as SD &HP can be successfully integrated .A commitment to SD& HP needs to translate in to relevance for both medical students and medical teachers.

Take-home messages: SD& HP should be core content – our approach offers insights into the possibilities and limitations.

8Y/7
How to achieve an evolving continuing inter-professional development module based on a competencies portfolio for community social pediatric professionals?

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Background: We present a continuing inter-professional development (CID) training module that could evolve with the practice of community social pediatric (CSP) This field relies on collaboration among professionals, patients, family, and community.

Summary of work: Following the development of an integrated CID strategy based on the desired practice and a core CID portfolio, a training module by phases was created including case studies, information capsules, audiovisual presentations, tools for self-assessment and self-learning and a process improvement quality. The self-assessment tool allow the learner to identify his learning needs, and monitor his CSP competency development.

Summary of results: The module aims to help doctors, lawyers and other professionals to integrate the model and the unique approach of social pediatrics in the community. The educational materials were designed to facilitate sharing expertise, learning from experiences and allowing the learner to develop their competencies based on their CSP practice capacity.

Conclusions: A partnership between Médecins francophones du Canada and Fondation du Dr Julien, fostered the contribution of CSP experts to develop a CPD strategy, translated in a module that aims to help doctors, and other professionals to share expertise, integrate an inter-professional practice, and promotes cross-sector comprehensive approach to child global health based on the implementation of the Child Rights Convention.

Take-home messages: We present an approach for developing a continuing interprofessional development (CID) training module in Community social pediatric that facilitates expertise sharing, skills improvement and capacity building in this new field.

8Y/8
Time for Change - Exercise, Obesity, Sports and Musculoskeletal Medicine in UK Medical School Curricula

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Background: Exercise and Obesity (EO) and Sports and Exercise Medicine (SEM) are important topics in today's society. However, little is known about their occurrence in medical school curricula.

Summary of work: The study investigates the availability of EO, SEM, and MSK teaching in UK medical schools, opinions regarding the importance and quality of teaching and compares SEM and EO with MSK teaching. An anonymous

online survey was designed, piloted and distributed to 33 UK medical schools.

Summary of results: The response rate was 76%. All medical schools have a direct focus on MSK in their curriculum.60% have a direct focus on EO and 40% on SEM. MSK is perceived to be more important and have better quality teaching.

Conclusions: EO and SEM teaching are uncommon and considered less important in UK medical schools compared to MSK teaching.

Take-home messages: The prevalence of obesity is rising fast and this has huge implications for society. The medical profession has an important role in encouraging physical activity and understanding using exercise as a health tool. In our medical school we now have included and evaluated SEM in the curriculum, using exercise as a health tool for many different medical conditions.

8Y/9
Comparison of Lifestyle of Medical Faculty Students compared with Students of other Faculties in the University

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Summary of work: "Lifestyle" is defined as a general way of living based on the interaction between living conditions in a broad sense and individual behavior patterns determined by cultural factors and personal characteristics. The objective was to analyze whether students in medical school, having knowledge of health and disease, have a healthier lifestyle compared with students of other faculties of the Universidad Mayor. The evaluation of lifestyle test "FANTASTIC" (acrostic in Spanish: Family; Associative Physical Activity; Nutrition; Snuff; Alcohol; Drugs; Sleep; Stress; Job introspection; Sexual conduct health check; Other behaviors) was applied to a representative sample of students admitted in 2009 at the Universidad Mayor. For data analysis and determination of significance, we used the student t-test.

Summary of results: The results showed no significant difference in lifestyles reported by medical school students, compared to other faculties. Apparently "Knowing" is not synonymous with "Healthy Living." Physical Education has a career best score in Lifestyle, and Physical Activity decreases the risk factors. In the Faculty of Medicine, the best scores are Kinesiology and Nutrition and the lowest scores are in Psychology and Digital Animation respectively.

8Y/10
Systematizing a teaching-learning experience in community health at a School of Medicine

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Background: A seven-year teaching-learning experience at the School of Medicine at Universidad de La Sabana, was analyzed in order to improve the social accountability of the undergraduate service learning program.
Summary of work: The process of systematization of service learning community health projects, explored the experience from an action-research approach methodology, understanding the process through the results of final project reports, interviews to key informants among participating communities, medical students and community health professors.
Summary of results: Understanding the evolution of the program, permitted the identification of key concepts and practices in community health regarding: community approaches, engagement and understanding, needs and resource assessment, establishing objectives, plan development and implementation, evaluation and communication of results. Specifying characteristics of the experience, allowed the construction of different program model profiles that corresponded to different phases of the program.
Conclusions: The description of the evolution of a systematized model allowed the enrichment of the program itself, while contributing to provide a matrix to identify attributes that will continue to monitor and document change in a constantly renewing model.
Take-home messages: The exercise of developing a systematized approach to community health teaching and learning, contributes to understand the greater challenge in social accountability of medical education programs, which is that of achieving healthier societies.

8Y/11
Techniques to teach health promotion to medical students at Hatyai Medical Education Center, Thailand

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Background: Hatyai Medical Education Center has had a health promotion curriculum for medical students since 2002 to teach knowledge, behavior and attitudes. The objective of this study is to share experience about techniques to teach health promotion.
Summary of work: All medical students in year 5 (30-40 persons per year), had a 5 week course in health promotion. They were taught by lecture, discussion, learned by

photography, by newspaper or radio, practice in Thai massage or Chinese ti-chi, interviewed an accident case in the emergency room and trauma ward, paid a field visit in the community and in a factory. They visited a drug addiction center and soldier training centre. Finally they undertook self learning and a project.
Summary of results: All the medical students liked the course and found it fun to learn. They had many new experiences. **Conclusions:** Health promotion can be taught by many techniques.
Take-home messages: Teaching techniques are important.

8Y/12
How is Global Health taught in UK medical schools?

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Background: Global Health education is now a recommendation of the GMC's Tomorrow's Doctors. How have medical schools implemented the teaching of subjects as varied as medical anthropology to tropical medicine and zoonoses?
Summary of work: We contacted every UK medical school and spoke to the course organiser for Global Health to determine what is taught and how.
Summary of results: So far, of the UK medical schools, telephone interviews were conducted with 15. 3 patterns have emerged in the undergraduate teaching of Global Health
1) Global Health taught within the core curriculum,
2) Student selected modules or BSc offered
3) Referral to extra-curricular organisations
Conclusions: With material ranging from the humanitarian charter to immunisation, Global Health teaching is determined by availability of enthusiastic experts and student demand. Meeting objectives of "Tomorrow's Doctors" so that students are able to "discuss from a global perspective the determinants of health and disease and variations in healthcare delivery and medical practice" is a challenge. Medical schools innovate with schemes such as NHS overseas links and work with local refugee populations in the development of effective learning environments.
Take-home messages: Teaching Global Health is a challenge as UK medical schools innovate to design curricula that equip students for global medical practice.

8Y/13
Strategies for training: Evaluation of a targeted Public Health course for Paediatric trainees

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Background: Understanding the health needs of populations and individual patients is an important part of being a doctor. The Royal College of Paediatrics and Child Health (RCPCH) have identified Public Health competences for Paediatric training. In the Northern Deanery, UK, these are expected to be gained through regional training sessions (1day every 2years) and opportunistically within clinical training which to date has been inadequate.
Summary of work: A two day programme was designed by Paediatric and Public Health trainees and consultants. Public Health trainees and a consultant delivered the course. Day One covered core principals of public health by didactic teaching and large group discussion. Day Two considered Paediatric-themed case scenarios with small group work. Evaluation was conducted with pre- and post-course questionnaires.
Summary of results: 12 Paediatric trainees attended the course. Trainees were more confident in the Public Health competences post-course. Feedback was overwhelmingly positive. Public Health trainee involvement was valued and they in turn achieved some of their competences in delivering this course.
Conclusions: This tailored course improved trainees' confidence in their knowledge of Public Health practice and was highly valued.
Take-home messages: Designing a tailored course to meet specific competences was feasible, practical and value-for-money. There were unintended benefits from collaborative learning for all parties involved.

8Y/14
"Learning by Doing": the Way for Health Promotion and Professionalism Learning

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Background: Health promotion and professionalism are important outcomes for medical students. There are many methods to implement both outcomes in clinical teaching. This study is our experience in using "Learning by Doing" activities to develop both outcomes for medical students.
Summary of work: During academic year 2009-2011, 4th and 5th year medical students designed their own activities in the communities. The students provided health education in safe sex, self-breast examination, breast feeding, home care and insulin injection in childhood diabetes mellitus, prevention of child injury, first aid in adult, prevention of communicable diseases e.g. rabies, dengue infection, and swine flu, and

Papanicolaou smear in prisoners. Self assessment (Likert scale 1-5) and focus group discussions were used to evaluate learning experiences. Questionnaire survey was conducted in participants.
Summary of results: The activities promoted all skills which average scores: health promotion skills (4.09); professional development (4.15); roles of doctors (4.15); leadership (4.27); communication (4.40) and teamwork (4.43).
Conclusions: "Learning by Doing" is the effective way for health promotion and professionalism learning.
Take-home messages: Good communication and teamwork lead to good outcome in health promotion.

8Z Posters: Community Oriented Medical Education

8Z/1
Constructing a curriculum in community primary care: reliable delivery and assessment processes utilising a portfolio approach

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Background: Delivering a robust curriculum in community primary care presents difficulties. The potential curriculum is vast. Students and preceptors are physically dispersed. Clinical experiences may be idiosyncratic and individual teaching and learning experiences will be variable. Any curriculum needs to guide students as they engage with patients in their diverse communities, align with student learning outcomes and be underpinned by robust and reproducible assessment that truly reflects the knowledge and skills required.
Summary of work: This presentation will illustrate a multidimensional approach to building a primary care curriculum in a large graduate entry problem based medical program - driven by evidence-based national health priorities, usage of locally harvested data about the prevalence of presenting problems in primary care encounters and alignment with the medical program learning outcomes and general practice vocational training learning outcomes. An eLearning platform allows students in diverse geographical locations to fully participate in learning, and ensures their achievements are evidenced in a reliable and reproducible way.
Summary of results: The portfolio approach allows for assessment across a range of clinical and knowledge-based skill. Evaluation data on student acceptability of the curriculum and psychometric data from the assessment will be presented.

Conclusions: An innovative approach to curriculum design in community primary care can overcome traditional problems with a vast curriculum and variable experience. A portfolio approach to assessment can achieve reliable results across a range of clinical practice locations.

Take-home messages: Curriculum design can facilitate community engagement but maintain reproducible assessment.

8Z/2
Improving Medical Students' Attitudes Using Patient-Centered Medical Home Concept

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Background: Patient-Centered Medical Home (PCMH) concept is an essential function of primary care. Partnering with patients and their families requires understanding and respecting each patient's unique needs.

Summary of work: The qualitative research was conducted using in-depth interview with eight fifth year medical students to reflect their attitudes towards home visit. Their attitudes were explored and recorded, transcribed, indexed, and content analysis was done by coding.

Summary of results: Initially the students perceived that home visit is time-consuming and cannot provide adequate care due to limited medical equipment. However, PCMH approach allowed the student to understand patients' conditions as a whole rather than only focus on their sickness. After home visit they were in close contact with patients and they connected more with the patients. This can strengthen doctor-patient relationship and made the students understand the aims of PCMH concept.

Conclusions: PCMH concept can enhance students' positive attitude towards home visit.

Take-home messages: Understanding PCMH concept may improve the quality of patient care by engaging students in learning.

8Z/3
Clinical skills training in the community, in the end or as a part of clinical rotation

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Background: Faculty of Medicine Diponegoro University (FMDU), Semarang and Faculty of Medicine Gadjah Mada University (FMGMU), Jogjakarta in Indonesia have implemented CBE clerkship. In FMDU it has been implemented after finishing the clinical rotation in a tertiary hospital, whereas in FMGMU it is a part of clinical rotation. These different methods were evaluated and compared.

Summary of work: Close and open-ended students' questionnaires were administered in the end of CBE clerkship.

Summary of results: Response rate to the questionnaire in FMDU was 96,5% (n = 138/143), and 98,6% (148/150) in FMGMU. Both students perceived that they are well prepared in communication skills, management of communicable diseases, and several clinical skills, and also reported that they have frequent experience in outpatient department. However, FMDU students perceived that CBE clerkship gave opportunity to work independently, and they felt more prepared to work as a doctor in the community. On the other hand, FMGMU students felt not so confident in patient management. They suggested that CBE clerkship should be done at least after clinical rotation in two Departments, i.e.: Internal Medicine or Paediatric and Surgery or Ob-gyn.

Conclusions: CBE clinical clerkship required students' confidence and independency. Preparation should be done properly for the students and the supervisor in the community.

Take-home messages: Tertiary hospital, which has enough skillful supervisors, is important to train basic clinical skills before sending students to the community.

8Z/4
Pursuing of appropriate curriculum for rural doctors in three Southern provinces of Thailand

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Background: The rationale of CPIRD project is to train doctors for their own rural area. The three Southern provinces of Thailand had their own characteristics in many aspects e.g. cultural, political, and incidents of violence. The standard curriculum from a large teaching hospital may not fit to their context. We qualitatively evaluated the clinical subjects of our current curriculum.

Summary of work: The authors went to the ten community hospitals in the three provinces to interview 3 groups of subjects separately. They were directors of the hospital, supervising nurses and new doctors. The main themes of discussion were competency of new doctors, appropriateness of the curriculum and how to improve the teaching subjects. Data was recorded and interpreted later at Hatyai MEC.

Summary of results: Three categories of remarks emerged from the interview i.e. 1. taught less-need more 2. taught and used and 3. taught but not used. Surprisingly, Ob-Gyn ultrasonography was the most needed skill. Forensic medicine and hospital quality management were two subjects that they needed to learn more. Medicine, Pediatrics, and Trauma were appropriate. Surgery, Family medicine, and Community medicine were three subjects that needed to be concise.

Conclusions: This interview helped us to see learning needs and ways to pursue for an appropriate curriculum for this area.

Take-home messages: Ob-Gyn ultrasonography, Forensic medicine and hospital quality management were the key subjects needed for three Southern provinces of Thailand.

8Z/5
Maximising medical students' learning in culturally diverse General Practice placements

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Background: Communication training and valuing diversity is integral to both the Manchester Medical School curriculum and the recommendations set out in the GMC's Tomorrow's Doctors (2009) document 1,2,3. Culturally diverse practices are involved in medical education; however some students have reported poor learning experiences.
Summary of work: 29 students who completed a placement at a culturally diverse practice completed an evaluation questionnaire to determine the main barriers to learning.
Summary of results: Language was perceived as the main barrier to learning. 15 (52%) stated that 81-100% of consultations would take place exclusively in English. 8 (28%) stated 21-40% of consultations were conducted in English. The remaining 6 (20%) were evenly split between 0-20%, 41-60% and 61-80%. Other factors such as standards of teaching, cultural differences and student expectations influenced student learning.
Conclusions: A number of strategies have been implemented to address these issues. A "Mind Your Language" workshop has been developed to provide GP tutors with techniques to enhance student learning 4. A seminar for students has been proposed to highlight the learning opportunities available at these practices.
Take-home messages: Educating tutors and students will provide a rewarding learning experience at these practices.

8Z/6
Contributions of "PET project" in Brazil for the development of primary care: a view of preceptors and students from a focus group

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Background: The "Programa de Educação Tutorial (PET)", proposed by the Brazil Ministry of Health aims to learning tutorial of undergraduate students in the health area seeking qualification in primary care. In this perspective, the undergraduate at the Universidade Federal de Goiás, developed PET in a city in the state of Goiás with the participation of three teachers, six preceptors and twelve students.
Summary of work: In order to evaluate the perceptions of tutors and students about the contributions of PET in rural internship during 2010 and 2011 we conducted a qualitative research using focus groups with six preceptors and seven students.
Summary of results: The preceptors noted the improvement qualification as a tutor. Greater involvement in preceptorship and interprofessional work. They requested continuous feedback and more training of assessment methods. The students reported satisfaction in the teamwork, greater interaction with the community, an increased distance learning skills. Suggested improving the use of technology for distance learning.
Conclusions: Focus groups permitted to evaluate the impact of the program as well as to detach the tutors' wishes for the skills development for mentoring and for the students` activities of distance learning.
Take-home messages: The PET project has contributed to improve the teaching based on community needs in Goiás.

8Z/7
Family Attitudes Towards Medical Students in the Continuous Family Study (CFS), Faculty of Medicine, Prince of Songkla University, Thailand

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Background: Continuous Family Study (CFS) is integrated into the second and third year curriculum. CFS provides opportunities for medical students to learn family culture, health and associated factors. Two students visit one family six times a year.
Summary of work: The objective was to describe family attitudes towards medical students. The families from two villages were interviewed using a questionnaire. Data were analyzed by SPSS software.
Summary of results: Of the 183 respondents, 62.3% were females, 56.3% had primary education and 68.3% were agriculturists. Their relationship with the students was mostly

affected by manners, neat clothing, polite words and attentiveness (x> 4.5). They agreed with CFS and its benefits (x> 4.25). Visit numbers and objectives perception were appropriate (x>4.0). Differences between the families visited by the second and third year students were objectives perception (t = 0.010), visit numbers (t = 0.008), and bothered feeling (t = 0.000).
Conclusions: The students' appearances and communication skills were important to establish family attitudes. There were more objectives perception and bothered feeling from the families visited by the third year students. The families had positive attitudes towards medical students. They agreed with CFS and its benefits.
Take-home messages: Improved relationship with families can provide learning opportunities for medical students outside the university.

8Z/8
An assessment of problem solving skills in family medicine during home visit

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Background: Home visit is one of the skills required in the training of 4th year medical students. The holistic approach and family assessment are also the core issues used to assess patients' problems. In addition good problem solving skills are particularly important for making appropriate care plans for patients. The problem solving skills in family medicine during home visit of medical students was assessed.
Summary of work: Seventy-eight 4th year medical students in academic year of 2010-2011 were divided into 26 groups to accomplish a home visit. They were given one-hour introductory session on the principles of the holistic approach, patient's illness and family assessment. Their problem solving skills in family medicine including five components (holistic approach information, family assessment, holistic problem lists, care plans, and overall performance) were assessed by scoring of students' group reports.
Summary of results: The inter-rater correlation among three assessors was 0.749. The highest average group score was 13 of 15, while the lowest was 5. Students performed well in data gathering for the holistic approach (average score 2.83 out of 3.00), whereas they showed moderate outcomes in family assessment, listing holistic problems, and making care plans (2.06, 1.79, and 2.08 out of 3.00, respectively).
Take-home messages: For better outcome of care plans, skills of family assessment and listing problems holistically need a stronger focus.

8Z/9
Learning through Experience: Dental Students' Reflection on Community-Based Health Promotion Course

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Background: A Community-Based Health Promotion Course is a practical-based curriculum. This course provided the sixth year dental students to 'work with' people in accordance with health promotion principles and its related concepts. All students were voluntarily divided into small groups and sent to Community Hospitals for four weeks under instructors who worked at those locations. The purpose of this study was to gain insight into the experiences of dental students and explore learning outcomes and benefits students reported.
Summary of work: Data were collected through dental students' documented critical incident essays and analyzed using thematic extraction and qualitative content analysis.
Summary of results: Students reported a broad range of outcomes and benefits. They gained more self-confidence to work with other people. The essays illustrated their widen perspective on people's lives in rural communities and showed an appreciation the important role of dentist in community. Moreover, engaging with different groups of people provided the students crucial conditions of introspection.
Conclusions: Student's reflection on learning experience is a crucial element instructors should be concerned. Using critical incident techniques is an effective tool to evaluate students' learning experience, since it brought together cognitive, affective and behavioral components of learning.
Take-home messages: Further study for facilitating students to develop reflexive skills is required.

8Z/10
Induction actions leading to better appreciation of primary care by medical students

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Background: Induction actions in recent years has led teachers and students of Medicine of Universidade Estadual

de Maringá (UEM) to show an increased interest in Community based learning and primary care.

Summary of work: This work sought evidence that these actions have brought about the expected changes.

Summary of results: In 2011 Progress Test of NAPISUL II Consortium composed by 8 Medical Schools in South Brazil, 208 students (89,1% of 234 students) of UEM presented the following results in Public Health and Community questions in respect to media: 1st y 49,5 x 50,8; 2nd y 48,2 x 54,5; 3rd y 69,4 x 61,0 ; 4th y 70,1 x 61,7; 5th y 68,4 x 66,2 ; 6th y 71,6 x 70,4 (results significants to 2nd, 3rd and 4th years). We observed too an increase of 200% of interest for the Family Medicine Residence Program by our graduates in the 2009-2012 period.

Conclusions: The induction actions promoted by the coordination of the course has led to a more equilibrated specialties choice by graduates and a greater appreciation of primary health care.

Take-home messages: Our results showed expressive progress but the need of more exposition of students to primary care scenarios since the beginning of the course.

8Z/11
Teaching from the Tree

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Background: Around 15% of teaching undergraduate medical curricula is delivered in General Practice in the UK. Although contact time has been expanding a theoretical framework is still missing to embrace the diverse teaching activities in the community. In 2005 WONCA Europe developed a new definition for General Practice which has led to the Royal College of General Practice speciality training curriculum.

Summary of work: Brighton and Sussex Medical School curriculum contains a module explicitly teaching General Practice as a speciality. Public health and palliative care are major contributors to the course. The three specialities created their own objectives and learning outcomes taught and assessed separately. In 2012 we started to apply the RCGP speciality training framework to describe course content and activities. Learning objectives and outcomes were grouped within the six core competencies and three special characteristics of General Practice.

Summary of results: Students, placement providers and faculty reported increased clarity and coherency of course outcomes and feel better briefed for their assessment.

Conclusions: The GP curriculum offers a flexible framework integrating diverse learning outcomes from separate specialities. The WONCA tree, as a graphic presentation of General Practice, has been helpful orientation for students and staff.

Take-home messages: Undergraduate curricular reformers should consider changes in speciality training in their work.

8Z/12
Undertaking pre-vocational junior doctor training terms in rural and general practice settings: examining strengths and barriers

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Background: Since 2005, Australia has embarked on a program to place junior doctors in a general practice setting for a term of their training. This Pre-vocational General Practice Placement Program (PGPPP) aims to provide junior doctors with an experience of general practice and to expose junior doctors to education experiences they would not otherwise have the opportunity to experience. The program is delivered through 17 Regional Training Providers (RTPs) across Australia. Queensland Rural Medical Education (QRME) is one of these and in 2012 it will place 100 junior doctors from 9 urban based teaching hospitals in 18 rural sites across Queensland for 10 or 12 week terms. Queensland is roughly 3 times the size of Metropolitan France.

Summary of work: This poster will explore the complexities of geography; working with a multitude of source hospitals; working with a large number of rural based general practices; and accommodating both first year interns and second year residents into the program.

Summary of results: From this the strengths and barriers of a successful program will be outlined. This will include an examination of the orientation program; the weekly education teleconferences; the monitoring and evaluation mechanisms; the logbook record keeping requirements; and the research components of the program.

Conclusions: On current reflection there are many successful aspects of the program but still some lessons ro be learned and applied for future groups.

8AA Posters: Lectures and Learning Resources

8AA/1
Navigating How Students View Video Recordings of Medical School Lectures to Inform Effective Learning Strategies

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Background: Research has shown that international medical students extensively use video lecture recordings (VLR) and consider them to be very helpful.
Summary of work: This study examines how first-year medical students use VLR. Students completed a questionnaire; sample questions included: Do you just watch the video? Watch the entire video or only selected parts? Pause video to review other sources? Take notes? Supplement class notes? Use PowerPoint slides included in the video? Watch with other students? Students also participated in focus group discussions to examine these issues further.
Summary of results: Students used videos to prepare for weekly quizzes and end of course exams. Students showed variations in how often, how long and when they viewed the videos and how they use the VLR as learning aids to supplement their preparation for tests.
Conclusions: Students value VRL and use them in different ways. Additionally students wish to learn more about increasing the effectiveness and efficiency of their use as study aids.
Take-home messages: This presentation describes results of this study and some training tools to enhance student learning while using VRL that are based on these results.

8AA/2
Feasibility and acceptance of a small group cooperative learning strategy for critical reading of the clinical literature

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Background: Preparation for critical reading of the clinical literature at the University of Medicine Lyon-Est begins in the third year. This study assesses the applicability of a cooperative learning strategy, the Jigsaw, for the tutorial which typically involves little student participation.
Summary of work: Students were encouraged to read the article before the tutorial by means of an online test. In the first phase of the tutorial, students worked in small groups by study question. In the second phase, groups were reformed such that there was an "expert" for each study question in the group. A report addressing all of the study questions was completed in the second phase. Instructors avoided lecturing and sought to promote collaboration within the groups.
Summary of results: Of the 322 participating students, 46% responded to a survey regarding the tutorial. Students reported that it allowed them to deepen their knowledge through exchanges with their peers (62%) and to identify their misunderstandings (50%). The lack of discussion time with the instructors was a negative point.
Conclusions: Students' acceptance of an interactive learning strategy was good. Incorporating an activity for students to clarify their comprehension with the instructor would improve student satisfaction.
Take-home messages: It is possible to use cooperative, small group learning strategies in France.

8AA/3
Increasing teaching quality and interactivity with the Sandwich Architecture by implementing an audience response system into a medical curriculum

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Background: To enhance students' attention and the quality of teaching, Audience Response Systems (ARS) support the learner centred Sandwich Principle in lectures with large auditories. ARS can be used in different ways thus providing feedback of participants' knowledge, attention and opinion. For both small and large groups, the ARS help lecturers raise the quality of their courses by following the Sandwich Architecture in an interactive way.
Summary of work: In an innovative teaching project at the Medical Faculty of the RWTH Aachen University we implemented an ARS (audience response system). Lecturers get advice, technical support and can use the ARS at any point in their lectures.
Summary of results: The ARS can be used in the following fields: 1. Introduction: level of knowledge at the beginning of a lecture. 2. Comparison: learning effect after the lecture. 3. Outro: persisting problems, misunderstandings after the

lecture. 4. Evaluation: improvement of future lectures possible. 5. Preparation: precise practice for exam questions

Conclusions: ARS supports learner centred teaching by…o increasing the interactivity; o improving the learning environment; o raising the students' attention; o providing feed-back for the lecturer

Take-home messages: The ARS supports the Sandwich Architecture and improves teaching as well as learning quality.

8AA/4

Designing and Evaluating a Resource to Teach 3rd and 4th Year Medical Students about "The Importance of Circadian Rhythm and Temporal Variations in Clinical Medicine"

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Background: We assessed whether the combination of an interactive lecture and small group discussions was an effective method of teaching in clinical medicine.

Summary of work: 3 tutorials were run, each containing 8 students (n=24) from the 3rd and 4th Year of Manchester Medical School. The interactive lecture provided core information surrounding a diverse number of conditions in an environment that enabled student engagement and participation. This was followed by small group discussions surrounding the practical applications of the material delivered in the lecture in clinical case scenarios. Students were given a test at the start and end of the session, and scores were measured using a Student's T-test, and a questionnaire for qualitative data collection.

Summary of results: This combination lead to a statistical improvement in test scores, high confidence in applying the information and improved problem solving skills.

Conclusions: This system is best used for acquisition of knowledge that is alien to the learner, revision of material, and for students entering independent learning courses from didactic teaching backgrounds. Additionally, students from several levels of study should be included in tutorials to enable peer-learning and to allow students to practice their teaching skills.

Take-home messages: This style of teaching shows promise for medical education and warrants further investigation.

8AA/5

Effective Factors on Theoretical Class Attendance according to Nursing and Midwifery Students' Point of View, Kerman Nursing and Midwifery

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Background: Classrooms are suitable places for transferring teachers' experiences to the students and a better understanding of educational contents. The students' absence from theoretical classes has been one of the increasing and most important educational problems in medical universities in recent years. This study was performed to determine the effective factors on theoretical class attendance according to nursing and midwifery students' point of view in School of Nursing and Midwifery, Kerman University.

Summary of work: In this descriptive-analytic study, 320 nursing and midwifery students were asked to fill in the researcher-made questionnaires using a census method. In total 217 questionnaires were filled.

Summary of results: Among all 217 students, 87.9% were female and 75.7% were single. Students' mean age (± SD) was 22.4(±4) years. Native students were 56.7% and only 14.6% were employed. Among the effective factors on theoretical class attendance, the highest mean scores belong to "teachers' scientific dominance and orientation" (4.7), "students' interest in the related topic" (4.67), "proper teaching method" (4.66), "importance of class attendance for better comprehension of the lesson" (4.58) and the lowest mean scores belong to "classrooms physical environment" (3.85) , "not attending the class as a duty", (3.88), using audiovisual aids (3.95).

Conclusions: The findings showed that attending classes is affected by factors related to both teachers and students; but the teachers' scientific dominance and orientation, teaching methodology and students' involvement during class discussions are the main factors which determine students' attendance in the classes.

8AA/6

Comparing the Effect of Lecture and Discussion Methods on Students` Learning and Satisfaction

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Shiva Beigizadeh (*Medical Educational Department, Faculty Member of Jahrom University Medical Sciences, Jahrom, Iran*)

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Background: Education is one of the most basic necessities of human communities and an important base of continuous development. The goal of the present study was to compare the effect of lecture and discussion methods on students' learning and satisfaction.

Summary of work: All students of the nursing (n=22) who were in their third semester participated in this quasi-experimental study which was performed in Jahrom University of Medical Sciences in 2011. The students received

lecture as the teaching method for the first 8 sessions of the course and in the latter 8 sessions, they participated in group discussions. They took a multiple choice question test after each method of learning. Data was analyzed using t-test and Fisher exact test by SPSS software.

Summary of results: The students' mean test score in lecture method was significantly lower than discussion method. There was no significant difference between students' overall satisfaction scores in lecture(3.17±.55) and discussion methods (3.69±.55)(p=0.03). Students' satisfaction from exam and course evaluations showed a significant difference between the two methods.

Conclusions: Students' learning increased during discussion method. It is recommended to increase students' participation by applying active teaching methods which can provide the opportunity for more learning.

8AA/7
Students' sensitivity in the group-setting class for the occupational therapist training

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Background: The sensitivity to group dynamics is an importance ability of occupational therapists(OTs), since OT uses the group work in therapy. Thus to cultivate the initiative sensitivity the students were subjected to the group class in reliving the experience of patients. Afterwards, submitted reports on their feelings to the class were analyzed along qualitatively divided categories below.

Summary of work: The class, 2 weeks, was composed of lectures on the "Basics of Group Psychotherapy" and the "Role-Play"to relive the client sense in the clinical group work. Then, students participated in a group work on their own issues.

Summary of results: From students' reports, sensitivity categories followed were extracted："Characteristics of self-action in a group","Catharsis obtained by talking","Sense of security or anxiety sensed in a group", and "Sense of affinity with patient's emotion". Precedence of the role-play in reliving the clinical settings may reduce the resistant feeling of students in talking themselves, and stimulate their active interaction, despite of the short-term class.

Conclusions: Effective class setting for group work may stimulate students to acquire active sense in the group dynamics.

Take-home messages: Should learn the group dynamics in the effective class.

8AA/8
Efficiency of interactive lectures on postgraduate education

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Background: During the lecture constant feedback was maintained via test questions with five answer choices. Five questions were offered during the lectures, and five more questions were given at the end of the lecture.

Summary of work: The analysis of the lecture's efficiency was conducted by comparing the percentage of correct answers given during the lecture with those given at its end. The answers were registered with five color indicator stripes corresponding with the color of an answer choice. During traditional lectures only five control questions were offered at the end of the lecture. The questionnaire was used on 35 interactive and 35 traditional lectures (108 respondents).

Summary of results: The investigation's analysis showed that the percentage of correct answers at the end of the lecture was by 73% higher than those given during the analysis of a clinical case. The number of correct answers given at the end of interactive lectures exceeded the number given at the end of traditional lectures by 14%. The questionnaire survey demonstrated that all of respondents noted greater efficiency of interactive lectures. 93,5% of respondents granted interactive lectures 4-5 points in all 8 suggested criteria and only 64,8% - to the traditional lectures.

Conclusions: Interactive lectures have a number of advantages over traditional lectures. The most significant advantages are direct feedback with the audience and higher activity of listeners.

Take-home messages: Interactive lectures are more effective than traditional lectures on postgraduate medical education.

8AA/9
Posters – how to make them a successful part of AMEE

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Background: At AMEE Vienna, a study was undertaken to help determine what makes a Poster Discussion successful. This was catalysed by anecdotes, admittedly of uncertain veracity, that poster sessions at conferences needed help.

Summary of work: A 'Luggage Label' study was undertaken at AMEE in 2011 to determine what makes a Poster Discussion of value. All those attending a particular Poster Discussion at this meeting were given a Luggage Label at the start of the session and asked to write down two features that make a Poster Discussion successful and on the back of

the label, what they would do differently in the future as a result of attending poster sessions (these data will also be presented). The number attending the session varied constantly. At a peak it was over 30.

Summary of results: Posters: should be grouped in themes, be of interest and inspire, be brief and structured, be low on text, tell the message and be discussed immediately after the presentation. Discussion: keep it short and simple. Chairman: Be engaged, prepared, able, experienced, enthusiastic, charismatic, show a personal interest in presenters, create an engaging learning environment.

Take-home messages: Poster attendees wanted clarity, humour, brevity and well designed posters. There is room for improvement.

8AA/10
Use of resources for learning by medical students at Universidad Andrés Bello, Viña del Mar, Chile

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Background: It is important to identify resources used to study and evaluate the use of the faculty's library.
Summary of work: Objectives: To know the preferences of resources used to study . To assess the library services. A cross sectional study, 174 medical students from 1st to 5th year. Anonymous self-administered questionnaire.
Summary of results: 72.1% study alone. Preferred source of study: 1st year books (84.6%); 2nd year their notes (78.6%); from 3rd year, PowerPoint presentations (60%). The use of library (book lending, study room, access to database) decreases from 92.3% in 1st year to 12.9% in 5th year. They never use: access to databases (61.6%); 92.4% Discovery browser; library website from home 63.7% and 53.8% online journals. Increased use of books in the 1st year, associated with the predominance of basic science subjects. From Year 3, use of PowerPoint presentations. Low use of library services, due to ignorance of services offered and forms of access. Low use of databases, linked to high number of lectures and hardly any self-learning activities and review of topics.
Conclusions: Low use of library services, excessive use of PowerPoint presentations as resources for studying.
Take-home messages: To train teachers in teaching methods/student-centered learning so as to encourage self-learning.
Disseminate and promote the resources of the library among students and teachers.

8AA/11
YouHUPE: Health education triggered by cinema

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Background: A teaching strategy was created in order to promote contact with everyday problems, their discussion and reflection between residents and preceptors. Building new professionals requires creative solutions to bring important subjects to their training. Cinema is capable of awakening emotions, discussions and new solutions to problems. So, YouHUPE has the potential to promote social and professional integration, ethics agreement, amplification of social accountability and professional qualification.
Summary of work: A film is diplayed monthly, with subjects related to health, teaching and training for 8 health professions and afterward there is a debate.
Summary of results: Promotion of: integration between professionals involved residency, continuing professional development with active methodologies, problem solving, critical thinking and practice of meaningful learning, use of scientific discourse in films to disseminate health information, exercise individual and collective reflection with supervision of professionals with expertise in the themes.
Conclusions: Increased the number of people involved and the themes discussed, implemented the discussion of national curriculum guidelines, new topics to the curricula: professionalism and social accountability and culture of active participation to solve problems and to learning, amplified the reflection on daily attitudes.
Take-home messages: YouHUPE exchanges knowledge and reorganizes the hospital dynamics facilitating the amplification of care actions, health team work, interdisciplinarity professional capacitation and learning.

8AA/12
Students' perceptions of clinical skills videos as an effective learning tool

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Background: Manchester Medical School's Virtual Learning Environment (VLE), provides students with access to numerous clinical skills videos. This study aimed to investigate their effectiveness as a learning tool.

Summary of work: A series of videos were created by Nick Smith, Head of Clinical Skills for Undergraduate Medical Education. These include demonstrations of practical skills, such as venepuncture, and clinical examinations. The videos were made available to all students' and their feedback evaluated by a questionnaire. A five-level Likert-type scale was used to collate responses.

Summary of results: 91 students completed the questionnaire. Students described the videos as "5 - extremely useful" (64%) or "4 - quite useful" (36%), with 95% stating they would use them again. Students used the videos for a variety of learning activities, with OSCE (Objective Structure Clinical Examination) revision being the most common, 84%.

Conclusions: Medical students value clinical skills videos as an effective learning tool, particularly with regards to OSCE revision. Videos demonstrating the "gold standard" for clinical skills could be viewed by both students and examiners, thereby helping to standardise undergraduate examinations.

Take-home messages: When used effectively, technology can enhance student learning and facilitate clinical skills education.

8AA/13
Evaluation of effectiveness of clinical demonstration films to obtain the objectives of restorative demonstration in dental students

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Background: Different methods are used for tuition such as images and videos. The aim of this research was to determine the effect of didactic films on achieving the goals of clinical demonstrations in the restorative course.

Summary of work: This was an interventional research with participation of students in Mashhad Dental School. Participants were divided in two groups: Group 1: live demonstration. Group 2: didactic film. Data were collected with two questionnaires with certified validity and reliability. Statistical analysis was done by t-student test.

Summary of results: The score of students who observed the didactic film was significantly more than students who observed the live demonstration (p=0.008). bConsidering score 7 as the acceptable range, about 44 students (28 for group 2, 16 for group 1) were in the acceptable range and 26 students (7 for group 1, 19 for group 2) in non-acceptable range with a significant difference between two groups (p=0.003).

Conclusions: Using a didactic film before, during and after teaching has many advantages such as repetition of learning experiments, less time and cost and providing some incentive to learning. Learning was performed more rapidly and easily by observing the didactic film due to feasibility of repetition in work process.

8AA/14
Utilisation of learning resources: A questionnaire based study comparing medical, dental and biomedical science students

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Background: Anatomy is an integral component of medical, dental and biomedical science training. However, learning emphasis differs between these groups with more emphasis on clinically relevant detail for medical and dental students compared to biomedical science. It is unclear if this difference affects the choice of learning resources used.

Summary of work: A questionnaire based study was conducted using first year students at the University of Birmingham. Students were asked to state resources they use and rank their preferred learning resources.

Summary of results: A total of 311 medical students (85%), 61 BDS students (80%) and 66 BMedSci students (73%) were included. Textbooks were most popular (96 %, 95%, and 95% respectively) and ranked highest. Internet resources were also popular (84%, 92% and 90% respectively) ranking first for the BDS students and second for medical and BMedSci students.

Conclusions: Textbooks remain the primary learning resource for most students. However, the use of internet resources is becoming a major resource. The wealth of information, combined with 3D animations and interactive learning material available is likely to contribute to this.

Take-home messages: Textbooks remain the most popular resource, although the internet is increasing utilised to learn anatomy.

8AA/15
Movies and medicine - Medical students' views on film-based learning encounter to enhance medical humanities

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Background: An innovative film-based learning encounter has been provided twice for all medical students and faculty members at the University of Helsinki. Students and faculty members go together to movies, see a Finnish film related to themes of medical humanities, and thereafter discuss it with film makers and medical experts. This paper describes experiences from these learning encounters, and students' ideas of how to further develop film-based reflection on medical humanities.

Summary of work: The first film was a true-life drama about a woman who lived 50 years in a psychiatric hospital and claimed she was a princess. The second film told a story of a shoe-shiner who tried to save an illegal immigrant child. The discussions stimulated students to reflect on the patient's perspective, doctor's ability to be unprejudiced, and expectations towards medical profession. This learning method has brought students from different courses, teachers and other faculty members closer together.

Conclusions: Movies can illuminate important aspects of health, illness, disease and disability. They provide insights into suffering and human life that are important in understanding patient's perspective in its variety.

Take-home messages: Viewing and discussing films together in a shared learning encounter between students, teachers and film makers is an excellent way of educating tomorrow's good doctors.

8BB Posters: Student Engagement and the Student as Teacher

8BB/1
Empower Medical Students to be Health Promotion Leaders via Student-Designed Projects

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Background: Following WHO concepts and strategies the Faculty of Medicine at Prince of Songkla University has developed health promotion education using blended

learning in the M.D. curriculum since 2006. Focus on health promotion leadership training, student-designed-with-team-based project were fostered.

Summary of work: Medical students did have success in designing team-based projects with use of concepts and advocacy tools for health promotion. However, most of the projects used the strategy that centred on providing information to develop personal skills. They appreciated the work of each other and were satisfied with the block. Measurement of their health promotion leadership skills showed average scores.

Summary of results: Medical students did have success in designing team-based projects with use of concepts and advocacy tools for health promotion. However, most of the projects used the strategy that centred on providing information to develop personal skills. They appreciated the work of each other and were satisfied with the block. Measurement of their health promotion leadership skills showed average scores.

Conclusions: Student-designed projects could help medical students achieve understanding in health promotion concepts and strategies. Skills for health promotion team and leadership could be developed but might need more experience.

Take-home messages: Don't forget to provide opportunities for medical students to involve leading health promotion projects.

8BB/2
Active student participation in clinical care at clinical education wards (CEW) ameliorates physician-patient-interaction

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Background: Since responsible participation and patient-centeredness in patient care are some of the prioritized aims in medical education, the Integrated Curriculum for Anthroposophic Medicine (ICURAM) implemented CEWs in internal medicine (since 2007), paediatrics and neurology

(since 2011). Final-year medical students practice complete patient care, being fully integrated in the clinical health care team under close supervision of a clinical teacher. But how do patients evaluate physician-student-patient-interaction including quality of care?

Summary of work: For the first time patients (n=91; response rate 48%) of three different CEWs answered a mixed-methods-questionnaire (Picker Inpatient Questionnaire) on general quality of health care and patient–physician-relationship also focussing on students' patient care.

Summary of results: Comparing CEWs with regular wards, patients reported fewer problems on physicians'-team-patient-relationship, very respectful patient care having more time for patients, more intensive differential diagnosis and communication, taking them more than or as serious as clinicians.

Conclusions: The ICURAM-CEW-model enhances responsible, active student participation in patient care giving students a realistic impression of future professional life. Good supervision by clinical teachers correlates positively with patient's assessment of quality of care.

Take-home messages: According to patients of all three CEWs active student participation in clinical care is profitable for physician-patient-interaction with retained quality of care.

8BB/3
Fostering interdisciplinary healthcare innovation amongst undergraduate students

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Background: Interdisciplinary collaboration has been implicated as a fertile source of innovation. Structural divisions in higher education institutions may create barriers to students of different healthcare professions working together.

Summary of work: A managerial team of undergraduate students created a national competition to source solutions to unmet clinical needs. Students from medical, healthcare, business and technology backgrounds were encouraged to collaborate on ideas and enter the competition. The pilot intervention culminated in a national conference, where students from across the UK could come to engage in healthcare innovation workshops and activities. Quantitative and qualitative analysis were undertaken to evaluate the effectiveness and benefits of the programme.

Summary of results: 150 students attended the conference as delegates, where 20 interdisciplinary projects were presented in the final competition. The majority identified areas for innovation in healthcare education. Students reported enjoying the interdisciplinary nature of the day, and reported their understanding of the roles of other health professions was enhanced. Students from all backgrounds agreed that they were more confident and more likely to engage in interdisciplinary projects in the future.

Conclusions: The event achieved its aims in fostering innovative ideas through interdisciplinary collaboration.

Take-home messages: Students may need further incentives for interdisciplinary working to overcome institutional divisions.

8BB/4
Community Health Screening Abilities: from students for students

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Background: Our local students' committee has been, during many years, organizing community health screenings in the region of our medical school. These screenings help characterize the population from those areas and give bases for notifying the local services about health outcomes.

Summary of work: Students' Committee and medical school were very interested in promoting the development of students' skills to conduct those screenings. A partnered project to provide training for these screenings has been created and was integrated in the curriculum.

Summary of results: Clinical Skills Lab together with Students' Committee has decided which skills were needed for the community screening: body mass index, waist-hip ratio, arterial blood pressure, capillary blood glucose and approach for diabetic foot. Students-as-teachers from 5th year had 8 hours training in these subjects. Classes were performed with small groups of 6 students from the 2nd year of Medicine. Students' feedback on students-as-teachers performance was obtained.

Conclusions: Medical students have a major role in the formulation and update of their own curriculum. Medical schools should be available to accommodate students' needs and their subjects of interest in the curriculum.

Take-home messages: Medical schools and students might unite strengths to develop programs adapted to their needs and that are useful for community health improvement.

8BB/5
Elective Course for Undergraduate Students in Family Medicine Clerkship: A structured program development for a desirable outcome

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Background: Elective courses are a fulfilling part of undergraduate medical education. We try to design a more structured program into the curriculum for providing a better response to each individual student's needs.
Summary of work: We have a process of 1) Assessing the students' needs: The learning objectives must be set up from each elective student. 2) Planning to design learning methods: Elective course is maximized and tailored to each individual student. That may be a concern with limited instructors. So we communicate in meeting with other staff how they teach following the program. 3) Reflection & feedback: Medical elective students have a session with the program director to assess whether their learning objectives are met or to identify further learning needs. The feedback information from the staff is also provided to plan for the next curriculum.
Summary of results: Nineteen medical students attended an elective course in the Family Medicine clerkship throughout the academic year of 2011. Identified desirable outcomes from students are 1) improving clinical skills, 2) broadening knowledge from regular rotation, and 3) pursuing personal career development. The learning methods used are practice in outpatient department, chart stimulated recall, and participating in postgraduate training activities. The results of evaluation of the courses are very satisfactory.
Conclusions: We have developed a structured program development for elective medical students in Family Medicine clerkship. The success of this program reflects the importance and usefulness of this structured program development as a part of continuous quality improvement.
Take-home messages: 1) Assessing the students' needs 2) Planning to design learning methods 3) Reflection & feedback.

8BB/6
Preparing for phlebotomy using fellow medical students as simulated patients: evaluation of a pilot

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Background: First year Graduate Entry Programme students at SGUL learn phlebotomy by watching a video followed by practice on manikin arms. Many students feel unprepared for the transition to real patients which takes place the following year. A pilot scheme providing students with the opportunity for further supervised phlebotomy practice on a manikin arm followed by practice on a fellow student was undertaken.
Summary of work: Students were offered one or more additional pilot sessions. These were evaluated by a questionnaire rating student's pre and post session confidence. 80 students (62%) completed the questionnaire. The results were analysed using MS Excel and SPSS.
Summary of results: There was a statistically significant (p<0.001) increase in student confidence at performing phlebotomy on a real patient after attending one or more of these sessions existed, independent of the number of sessions attended.
Conclusions: The results from the evaluation suggest that the pilot sessions were successful in increasing students' confidence at performing phlebotomy on a real patient making them more prepared for their future clinical attachments.
Take-home messages: Practicing phlebotomy on peers, in a supervised environment appears to be a useful adjunct to the more traditional approach of learning phlebotomy on manikin arms, facilitating a smoother transition into the clinical environment.

8BB/7
Student Assessors in a Formative Objective Structured Clinical Examination

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Background: OSCE marking is amenable to allowing any examiner who has been trained to assess a station. This approach has been used by integrating simulated patients into assessment as examiners. (Bucknall et al.) were the first to show that peer assessors had high agreement with faculty in the assessment of resuscitation skills in healthcare students.
Summary of work: We took a cohort of undergraduate medical students sitting a formative OSCE and investigated one station (Basic Life Support) where candidates were assessed by independent assessors; an experienced OSCE assessor and a student assessor. Both assessors remained blind to each other's marking.

Summary of results: This study allowed 99 candidates to be examined. We determined the sum and the variance of each task of the station. In all of the 22 discrete tasks there was a majority of complete agreement between both groups. Of those tasks where there was a discrepancy of ±5 or more the student examiner group was more lenient in 7 tasks while the faculty examiner group was more lenient in 2 tasks. Global rating was consistent between the examining groups.
Conclusions: This small local descriptive study adds to the early work done on the subject and illustrates the practical use of student assessors in formative assessment.

8BB/8
Generation of written questions has a positive learning effect in male students: A randomized controlled trial

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Background: How to improve the quality of small group work (SGW) dialogue? Therefore, the effect of challenging students to generate and write down an extra question and prioritize the questions during SGW on the formal exam score was studied; the effect of gender and discipline was taken into account.
Summary of work: The intervention was performed during a General Pathology course. It concerned 346 medical and 98 biomedical students, 307 females and 137 males. At the start of the SGW on tumor pathology the tutor invited students to generate an extra question related to the topic. This concerned a question about issues still unclear to the student, or a deepening one. At the end of the SWG students individually wrote down a question, and plenary selected the two best ones per SGW during a short discussion. In the control group SWG occurred as usual. Primary outcome measure was the subscore on tumor pathology (range 1-10) in the course exam; the effect of gender and discipline was assessed.
Summary of results: The mean subscore per student was 7.2 (intervention) and 6.9 (control; p=0.22). Male students of the intervention group had a 0.4 higher subscore than those in the control group (p=0.05). In female students this was only 0.05 (p=0.75). Medical students scored 0.7 higher than biomedical (p<0.000).
Conclusions: Male students can be challenged by formulating and prioritizing an extra written question during SGW. This seems an interesting stimulus to improve learning, especially in male students.

Take-home messages: Modus to stimulate male students.

8BB/9
A study to explore the experiential learning of medical students while role playing as patients in junior doctor induction PACES at a DGH

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Background: During an O&G rotation, 8 medical students, in year 5, role played as patients and their partners in four clinical scenarios. This was in the setting of induction at the beginning of a rotation for SHOs in GPVTS.
Summary of work: SHOs were asked to take a focus history and work through investigations and management plan for the patient. Feedback was then given by the Consultant/SpR.
Summary of results: Medical students found it to be a useful aid for learning. Understanding that there wasn't a significant knowledge gap between medical students and SHOs enhanced confidence and future preparation. This expercise gave medical students a unique opportunity to experience the consultation from the patient's perspectives providing an insight into the ideas, concerns, and expectations. Consultant's feedback to SHOs further aided learning and understanding.
Conclusions: Integrating medical students and seniors in interactive sessions of formative assessments was found to be a unique opportunity to experience patient's perspective and bench mark the next level of expected knowledge and skill base.
Take-home messages: Medical students have a positive experience of participating in learning and teaching formats for the junior doctors.Role playing as patients assists in their understanding patient's perspectives and thus can be a good way to encourage patient centred approach.

8BB/10
Medical Students' Contribution to Developing Palliative Care in Dominica, a Limited Resource Country

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Background: Education about palliative care is limited in many medical school curricula. Friends of Espwa Donmnik, a student-run organization at Ross University School of Medicine (RUSM), has the goals of educating the Ross community and improving supportive care for patients with life threatening illnesses in Dominica.

Summary of work: Since 2007, medical students have raised funds to assist patients in need and established a home visiting program for shut-ins. Its community programs and awareness projects are becoming an integral aspect of extracurricular learning.

Summary of results: Espwa has exposed hundreds of medical students to the challenges of palliative medicine. Its members have raised over $40000 ECD for local patients, helped with the establishment of a new oncology clinic in Dominica and support the fledgling palliative care service. Espwa works with Ministry of Health and NGOs in assisting the local community and educating medical students in palliative care.

Conclusions: The multidimensional work of the Espwa medical student group, including home visitation programs, on-campus presentations, and proposed research into challenges facing terminally-ill patients, are important educational tools in training tomorrow's physicians.

Take-home messages: Medical student organizations can be instrumental in educating fellow students about end-of-life issues and in supporting local communities.

8BB/11
Students as Teachers: First aid training for first year student doctors and student nurses

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Background: Medical students are increasingly seeking opportunities to develop their teaching skills. In Sheffield, students have worked with faculty to develop a first aid training course 'Street Medicine' for first year student doctors and nurses, which is delivered by student facilitators.

Summary of work: Over 160 student facilitators have been trained to deliver practical first aid training as part of the Street Medicine event. The training for facilitators consists of a two hours session during which the practical, clinical content of the course is covered, along with approaches to facilitating a small group. During the event, the student facilitators work with a group of 10 students (nursing and medicine) and focus on: (1) basic life support, choking and the recovery position; (2) bleeding, shock, fractures and splinting.

Summary of results: 1160 students completed the evaluation questionnaire (4 events). The small group peer teaching was seen as a major strength; student facilitators were considered very approachable and friendly and student learners felt more comfortable asking questions than with lecturers. Student facilitators requested that more support be made available for responding to questions beyond their knowledge level.

Conclusions: Working with student facilitators to deliver first aid training during the Street Medicine event proved very successful.

8BB/12
Effect on perception of fit and perceived barriers to medicine amongst medical school applicants following a peer-led e-mentoring programme

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Background: UK medical students remain drawn from higher socio-economic groups, the top two accounting for 90% of undergraduates. Increases in tuition fees may exacerbate this trend.

Summary of work: Medical school applicants were invited to apply online and data was collected about demographic and socio-economic background. 15 mentees were selected and matched with a current medical student. Periodic questionnaires qualitatively evaluated the scheme and monitored the mentees aspirations and perception of fit, plus any perceived barriers.

Summary of results: Quantitative data revealed an overall increase in perception of fit over time from all mentees; this was greatest in those with no immediate medical role models at the outset. Qualitative evaluation confirmed that the mentees found the scheme both useful and enjoyable.

Conclusions: Applicants benefit from a peer-led mentoring scheme regardless of their background, however most utility is for those who do not otherwise have the social capital to access medical role models.

Take-home messages: E-mentoring provides an effective way to deliver one-to-many mentoring and give access to otherwise unavailable resources.

8BB/13
The expectations and experiences of student tutors participating in a voluntary, student-organised, extra-curricular, near-peer tutoring programme

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Background: In 2005 a programme of Peer-Assisted Learning was developed by a small group of students and has since run entirely under the control of a small community of Near-Peer Tutors (NPTs) at Barts and The London.
Summary of work: The aim of this study was to explore the expectations and experiences of NPTs participating in the voluntary, student-organised, extra-curricular near-peer tutoring programme.
Summary of results: NPTs are motivated to teach for the purpose of their own revision, their professional development and for altruistic reasons. They are initially very nervous and worry that they may not have sufficient knowledge to teach. However, with experience, NPTs believe they increase in confidence and improve their teaching and presentation skills. They also report benefits for their own learning and appreciate the opportunity to revise earlier aspects of their curriculum. Overall NPTs are satisfied and enjoy their experience but view tutoring as a substantial time commitment for which they do not receive adequate recognition. NPTs believe that they are are more approachable, therefore tutees find it easier to ask questions.
Conclusions: There are a number of advantages to be gained from this initiative but although students should be allowed control to develop a programme of education that meets their needs, they may require substantial support to make the most of this educational opportunity.
Take-home messages: Students may lack the expertise to implement a programme of medical education that is educationally sound and therefore may require guidance to develop and take this initiative further.

8BB/14
Peer teaching: an approach to enhance learning in Ophthalmology

Supaluk Raiyawa *(Medical Education Centre, Udonthani Hospital, Ophthalmology, Udornthani, Thailand)*

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Background: Peer teaching was used in the class of fifth year medical students in ophthalmology, aiming to assess whether peer teaching could enhance learning.
Summary of work: 30 fifth year medical students in 2011 each selected one topic to teach in a group of seven. Assessment was 360 degree in all aspects and analyzed with Kirkpatrick 4 levels. Students' knowledge was assessed before and after teaching. Peer teachers did a self evaluation on how well they understand the lesson and satisfaction with confidence they have and also assessed by students, and instructor. Assessment was on a five point Likert scale and a cut point at 5.
Summary of results: At level one, the issue of opinion, satisfaction of peer teachers and students were at 100% and 21.9%. Level two competencies increased in the aspect of peer teachers' confidence and students' understandable knowledge at 87.5% and 65.5%. Level three, performance assessed by instructor, peer teachers' eagerness & enthusiasm and students' good participation at 75.5% and 75.5%. Level four, outcome assessment, teachers gain experience & knowledge at 100%, and students' knowledge scores increased significantly from 7/IQR 3 to 10/IQR 1.
Conclusions: Peer teaching can enhance learning in ophthalmology.

8CC e-Posters: Social Networking

8CC/1
Patterns of Internet Use in Medical Students

Sirina Satthapisit *(Medical Education Center, Khon Kaen Hospital, Collaborative Project to Increase Production of Rural Doctor, Ministry of Public Health, Khon Kaen, Thailand)*

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Background: Internet is useful and is a part of medical students' daily life.
Summary of work: This was a cross sectional survey in 216 medical students in academic year 2011 using a self administered questionnaire to find out the patterns of their internet use.
Summary of results: The response rate was 79%. Their average and maximum time on the internet was 3.1 and 10 hours/day on weekdays and tended to be longer over the weekend with the average of 4.9 hours/day and maximum of 15 hours/day. Most of them used internet for social networking. During the class time, 40% still used internet for social networking, 32% used it for searching for educational data. About 43% and 39% thought they might addict or addicted to the internet respectively. The pattern of internet use was found not to be different regarding year of education. Grade Point Average was found to be not associated with self-reported internet addiction.
Conclusions: Medical students used internet for communication rather than for education even in the classes and might interrupt their learning gain.
Take-home messages: Learning programs need to be adjusted to meet student needs. Discipline for internet use in the class should be reinforced.

8CC/2
To Tweet or not to Tweet – students' perceptions of new teaching on digital professionalism

Bernadette John (*Kings College London, Dept of Primary Care and Public Health Sciences, London, United Kingdom*)
Maria Elliott (*Kings College London, Dept of Primary Care and Public Health Sciences, London, United Kingdom*)

(*Presenter:* Bernadette John, Kings College London, Dept of Primary Care and Public Health Sciences, 4th Floor, Capital House, 42 Weston Street, London SE1 3QD, United Kingdom, bernadette.john@kcl.ac.uk)

Background: Social media has introduced a new layer of accountability for those practicing medicine today. It is increasingly evident that there are challenges for clinicians resulting from the confusion regarding the extent to which information is private, the ease with which information can be broadcast, the informality of social networking making it easy to fall foul of defamation laws, and the blurring of lines between our private and professional lives (Sheather 2011). At King's College London School of Medicine we have introduced a range of strategies to provoke students into reflecting on the potential ramifications of a poor digital footprint.
Summary of work: A group of 440 Year 1 students were invited to attend a symposium on Professionalism. The students were emailed an online questionnaire, seeking their feedback on which of a panel of nine speakers was most relevant to them.
Summary of results: 96 students replied. 65% of those who responded said that presentation on social media was most useful to them.
Conclusions: Evidence demonstrates that students are keen to access guidance regarding the potential pitfalls of interacting via social media.
Take-home messages: Students require guidance on Digital Professionalism.

8CC/3
Teaching tomorrow's doctors on Twitter today

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MJ Seager (*University of Bristol, Bristol, United Kingdom*)
A Wardle (*University of Bristol, Bristol, United Kingdom*)
J Russell (*University of Bristol, Bristol, United Kingdom*)
A Cobb (*University of Bristol, Bristol, United Kingdom*)
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Background: Twitter is a real-time information network that connects its users to the latest stories, ideas, opinions and news. Users post 'tweets' of up to 140 characters to share information quickly and widely. As an efficient medium for rapid dissemination of concise information, could Twitter be exploited to deliver medical education?
Summary of work: Students at the University of Bristol manage a Twitter profile named @askamedic. They 'tweet' advice, answer questions, 'retweet' medical news and provide an open forum for student-led teaching. A pilot cross-sectional survey collected quantitative and qualitative data from 82 third year medical students.
Summary of results: 18/82 students (22%) used Twitter, of which 12 (65%) followed @askamedic. 89% of followers found tweets about clinical facts useful. Tweets on exam advice, sample exam questions and links to other educational resources were found useful by 11 (89%), 10 (83%) and 8 (67%) respectively. 33% agreed that Twitter is a good medium for delivering medical education.
Conclusions: Results reflect the popularity of Twitter and that the majority of followers found value in educational tweets.
Take-home messages: Twitter has potential to be a powerful medium for rapid, innovative and effective delivery of medical education.

8CC/4
Filling the gap of space and time by using Facebook in qualitative research

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Araya Khaimook (*Hatyai Medical Education Center, Surgery, Songkhla, Thailand*)
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(*Presenter:* Rajin Arora, Lampang Medical Education Center, Obstetrics & Gynecology, Lampang Hospital, 280 Paholyothin Road, Lampang 52000, Thailand, drrajin@live.com)

Background: In Thai culture, retrieving truth from face-to-face qualitative research is not easy. Thai students tend to hide intimidating issues. At Lampang Medical Education Center (LMEC), there had been complains about one department for years. This threatened students of all level. LMEC Administrators wanted to know scientifically what the doom was.
Summary of work: A qualitative research was done. For fear of not knowing the truth if a traditional method was used, researchers developed a closed private group in Facebook instead. Graduates of the class 2010 were invited to join the group which was active from April 20th-30th 2011.
Summary of results: There were 27 out of 28 graduates joined the group. From 19 issues raised, there were 124 comments and 224 Likes. Data were retrieved qualitatively and reported to high administrators for management. Initially, it inflicted a controlled conflict. But later, improvements were seen. Many benefits of Facebook were also observed.
Conclusions: Facebook yielded many advantages over traditional face-to-face method. It helped overcome the problem of space by bringing graduates together. Time was literally unlimited. Subjects could join any discussion at any time. Researchers could use "Like" to interpret agreement. And many intimidating issues could be pronounced.
Take-home messages: Facebook should be considered as a tool for qualitative research.

TUESDAY 28 AUGUST 2012

8CC/5
Facebook: the modern day classroom for the medical student

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R Ravindran (*Imperial College London, Faculty of Medicine, London, United Kingdom*)
M Kashyap (*Imperial College London, Faculty of Medicine, London, United Kingdom*)
G Phoenix (*Chelsea & Westminster Hospital NHS Foundation Trust, Department of General Surgery, London, United Kingdom*)

(*Presenter:* L K Lilis, Imperial College London, Faculty of Medicine, London, United Kingdom, Lydia.lilis08@imperial.ac.uk)

Background: Evaluation of a 'Teaching Forum' within an internet based social networking site, Facebook, as an educational environment for students that underwent clinical attachments at a district general hospital between September 2010 and June 2011.
Summary of work: An independent online survey was used to collate the experiences of 68 undergraduate members of the 'Teaching Forum', with the Likert scale used for analysis of responses.
Summary of results: From those that had responded (n=38, 55.9%) the teaching forum was accessed weekly by all undergraduate students.Some did not use their Facebook profile for social reasons (n=2, 5.3%). Most students spent greater than 30 minutes studying for the weekly extended matching questions set in the forum (n=29, 76.3%), with the majority having attempted all 10 question sets (n=16, 42.1%). Furthermore, students felt more comfortable asking questions on the forum than at ward-rounds and clinics (n=33, 86.9%). The general consensus was that Facebook can be used for educational purposes (n=34, 89.5%), and that the forum helped achieve the learning objectives of their surgical curriculum (n=35, 92.1%).
Conclusions: Facebook can help enrich the knowledge of surgical students by providing an environment which promotes learning and healthy discussions amongst peers.

8CC/6
eyeQ: where social media meets e-learning

Mark Fajgenbaum (*King's College Hospital, Ophthalmology, London, United Kingdom*)
Lisa Stewart (*Eyedocs, London, United Kingdom*)
David A Johnson (*Festival Software, Durham, United Kingdom*)

(*Presenter:* Mark Fajgenbaum, King's College Hospital, Ophthalmology, 35 Therapia Road, London SE22 0SF, United Kingdom, markfajgenbaum@gmail.com)

Background: The advent of social media has transformed the ways many people communicate, cultivate inter-personal relationships and disseminate information. As the medical profession evolves, it must learn to embrace these changes - and to leverage the vast capabilities of social media to improve patient care and the spread of knowledge among professionals.
Summary of work: Eyedocs.co.uk is an organic, online community developed by ophthalmologists for ophthalmologists and fellow eye care professionals. It has utilised social media platforms such as profiles, instant messaging, forums, groups, video sharing and blogs to enhance the spread of ophthalmic information across the globe for the purposes of education and career development. Its most popular feature is eyeQ - a free, interactive question-bank for board-exam revision developed by the community, and which allows personalised feedback together with messaging and question discussion.
Summary of results: This e-presentation demonstrates the functionality of Eyedocs and its eyeQ e-learning software, which has become one of the most popular online applications for ophthalmologists in Europe.
Conclusions: We believe that the ophthalmology community of Eyedocs may serve as a template for many other specialties, who seek to embrace the possibilities of social media and to explore its potential as an educational platform.

8CC/7
Exploring the use of Facebook in medical education

Christopher McGilvery (*Ross University School of Medicine, Office of Faculty Affairs, Portsmouth, Dominica*)
Maria Sheakley (*Ross University School of Medicine, Physiology, Portsmouth, Dominica*)

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Background: The goal of this study was to explore pedagogical methods regarding the use Facebook in medical education.
Summary of work: 350 first semester medical students were invited to join the cardiovascular physiology Facebook page, but participation was voluntary. Discussion threads aligned to each hour of cardiovascular physiology lecture were created in Facebook, and participants were able to post questions, read other students posted questions, and see all of the responses from the professor. A survey was administered to students at the end of the learning module to assess their perception of the use of Facebook for educational purposes.
Summary of results: Approximately 70% of students voluntarily joined the cardiovascular physiology Facebook page. In total, 63 questions were posted by students during a four week period, and all questions were responded to by the professor. Students who joined and used the Facebook page had an overall positive experience using social networking as a means of communication for learning.
Conclusions: Faculty can easily create and maintain discussion boards in Facebook to promote and enhance meaningful communication with their students. Many students expressed appreciation of this means of communication because it utilizes a social networking platform which they already use regularly.
Take-home messages: Social networking can be used to enhance the educational experience for students and faculty.

TUESDAY 28 AUGUST 2012

8CC/8

How do I create a personal-learning environment (PLE)? Technical experiences with a veterinary professional social network

Elisabeth Schaper (*University of Veterinary Medicine Hannover, Foundation, E-Learning Department, Hannover, Germany*)
Neil Forrest (*Royal Veterinary College London, London, United Kingdom*)
Esther de Groot de Groot (*Faculty of Veterinary Medicine, University Utrecht, Utrecht, Netherlands*)
Mira Mandoki (*Szent Istvan University Budapest, Faculty of Veterinary Science, Budapest, Hungary*)
Emilia Ciobotaru (*Faculty of Veterinary Medicine Bucharest, Romania*)
Jan P. Ehlers (*University of Veterinary Medicine Hannover, Foundation, E-Learning Department, Hannover, Germany*)

(*Presenter:* Elisabeth Schaper, University of Veterinary Medicine Hannover, Foundation, E-Learning Department, Buenteweg 2, Hannover D-30559, Germany, elisabeth.schaper@tiho-hannover.de)

Background: Learning-management-systems are very successful in education, as are social networks in the private sector. Personal-learning-environments try to combine the advantages of both tools. This study examined how a PLE could be best created.
Summary of work: A list of 38 criteria in four categories for a PLE was developed. Eight tools were rated against the list by ten ICT educationalists. The best rated tool was chosen for a pilot of the NOVICE project.
Summary of results: Elgg scored best as social-network software. An elgg community is organized in interest groups. Communication and collaboration is achieved via chat, discussion boards, blogs, microblogs, bookmarks and file uploads. Several additional functions (e.g. "like-button") can be found in the Elgg community and added to the standard settings. Since Sept 2010 more than 1800 members have joined NOVICE and started over 100 groups.
Conclusions: Starting our own network required more effort than using an existing one like facebook. But it also showed substantial advantages in privacy and security. Next to the standard installation, an open-source community like elgg offers several plug-ins that could be used but still have to be adapted professionally.
Take-home messages: Open source tools like elgg can be used to create PLEs but substantial adaption is necessary.

8CC/9

Use of social networks among medical students

Ariel Gustavo Scafuri (*Federal University of Ceará, Department of Morphology, Fortaleza, Brazil*)
Carlos Felipe Teixeira Lôbo (*Federal University of Ceará, Department of Morphology, Fortaleza, Brazil*)
Francisco José de Oliveira Filho (*Federal University of Ceará, Department of Morphology, Fortaleza, Brazil*)
Elaine Santarelli (*Federal University of Ceará, Department of Morphology, Fortaleza, Brazil*)
Allysson Bruno Raphael Braga (*Federal University of Ceará, Department of Morphology, Fortaleza , Brazil*)

Francisco Edilson Silva Aragão Júnior (*Federal University of Ceará, Department of Morphology, Fortaleza, Brazil*)

(*Presenter:* Ariel Gustavo Scafuri, Federal University of Ceará, Department of Morphology, Leonardo Mota Street, 699, Meireles, Fortaleza 60170040, Brazil, anatomia@ufc.br)

Background: Nowadays, medical students are mostly composed of the Millennial generation. They have a facility in learning through digital media. The use of social networks, as an adjuvant to the traditional lectures, helps students developing a better understanding of the subjects.
Summary of work: 96 medical students responded to a survey created by the researchers and posted on the internet. It contained questions about the usage of social networks.
Summary of results: Considering the main social networks used, 87 (67, 4%) use Facebook, 17 (13,17%) Orkut, 16 (12,4%) Twitter and only one uses Linkedin. About the use of this technology to conduct educational activities outside the classroom, 27 (28,4%) find it interesting, 26 (27,4%) said the idea pleases them 25 (26,3%) are curious, 8 (8,4%) aren't interested, only one sees no utility at it and none was against it.
Conclusions: The current students were severely impacted by the disaggregation of knowledge through digital media, resulting in different learning styles. There is a considerable usage of social networks among medical students, especially considering discussion forums and sharing information.
Take-home messages: Professors must employ these technologies so their students can develop a more active participation in the learning process.

8CC/10

Not another NHS website! : The challenges of developing a new offer in a crowded market place as part of an NHS Trust

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Henry Fuller (*Leeds Teaching Hospitals NHS Trust, Medical Education, Leeds, United Kingdom*)
Sarah Kaufmann (*Leeds Teaching Hospitals NHS Trust, Medical Education, Leeds, United Kingdom*)
Margaret Ward (*Leeds Teaching Hospitals NHS Trust, Medical Education, Leeds, United Kingdom*)
Andrea Fox-Hiley (*Leeds Teaching Hospitals NHS Trust, Medical Education, Leeds, United Kingdom*)
Stuart Haines (*Leeds Teaching Hospitals NHS Trust, Leeds, United Kingdom*)

(*Presenter:* Stephen Lloyd-Smart, Leeds Teaching Hospitals NHS Trust, Medical Education, Ashley Wing, Beckett Street, Leeds LS9 7TF, United Kingdom, stephen.lloyd-smart@leedsth.nhs.uk)

Background: Medical Education Leeds has spent two years developing a web presence and identity. Our presentation discusses the barriers we have faced and overcome during this period and how we have tailored our online offer to provide junior doctors and medical students with a useful range of resources.
Summary of work: We have developed a multi channel online presence incorporating social media channels such as

Facebook, Twitter and You Tube with our website and a forum to provide logistical and educational resources for our consumers.

Summary of results: Data collected online from our primary consumers is overwhelmingly positive in regard to our online brand, functionality and provision, however engaging the majority of our these consumers has proved difficult. Focus group data has encouraged us to provide a more specific offer and look closely at the information and resources we supply in the online environment.

Conclusions: Providing the opportunity for engagement and making content accessible is just as important as providing useful and interesting content.

Take-home messages: It is not enough to just provide content. Establishing a specific offer is important to differentiate yourself in a crowded market place. Engaging with clinicians and consumers is an essential part of the process.

8CC/11
#Gasclass - Integrating the virtual and traditional classroom in anaesthesia

Martin Doran (*James Cook University Hospital, Department of Anaesthesia, Middlesbrough, United Kingdom*)
Sean Williamson (*James Cook University Hospital, Department of Anaesthesia, Middlesbrough, United Kingdom*)
Ian Whitehead (*ames Cook University Hospital, Department of Anaesthesia, Department of Anaesthesia, Middlesbrough, United Kingdom*)

(*Presenter:* Martin Doran, James Cook University Hospital, Department of Anaesthesia, Marton Road, Middlesbrough TS4 3BW, United Kingdom, j3ffdoran@gmail.com)

Background: #Gasclass is a clinical 'case' based discussion taking place in both a virtual (using twitter) and traditional classroom. Case information is posted weekly with associated clinical questions. The clinical complexity increases throughout the week aiming to finish with discussion at FRCA level.

Summary of work: First term objective was creating a working virtual classroom. Following term 1 we surveyed users for feedback about demographics and user experience. Term 2 saw the introduction of traditional classroom based tutorials linking with the online case discussion.

Summary of results: Follower numbers demonstrate an upward trend to 328 at time of writing. We calculate the daily 'class size' using number of blog hits, peaking at over 200 per day. 140 individuals have so far contributed to #gasclass.

Conclusions: The virtual classroom frees the user from the constraints of a traditional classroom and facilitates worldwide participation. Users can access it whenever and where ever it is convenient. Our survey showed the majority were using smart phones or tablets for access.

Take-home messages: Our statistics successfully demonstrated the integration of virtual and traditional classrooms using existing and widely accessible technology. This model could easily be reproduced in other areas concerned with #meded

8CC/12

Social networking in medicine: The VIIth nerve Facebook page

Rachel Mullenger (*Dalhousie University, Medicine, Halifax, Canada*)
Kim Blake (*Dalhousie University, General Pediatric Department, Halifax, Canada*)
Lauren Jain (*Dalhousie University, Medicine, Halifax, Canada*)
Genna Bourget (*Medicine, Ireland*)
Nadim Joukhadar (*McGill University, Montreal, Canada*)

(*Presenter:* Kim Blake, IWK Health Center/ Dalhousie University, General Pediatrics, 5850/5980 University Ave., Halifax B3K 6R8, Canada, kblake@dal.ca)

Background: Recent years have seen a rise in the popularity of social network platforms, including facebook. This enables unprecedented scope in communication and information sharing. The VIIth Nerve is a facebook page for medical students worldwide, providing a platform to share medical cases, educational videos and audio.

Summary of work: A facebook page has been developed and input is ongoing. Demographics, location, page visits and posts are tracked. Student questionnaires and focus groups will determine usefulness and challenges of social media in education.

Summary of results: To date 131 users subscribed to the facebook page and the viral reach is 40-200 people per day. Sixty-two percent of subscribers are female and eighty-nine percent fall between the age of 18 and 34. Users are from nine countries worldwide and eight different first languages are indicated.

Conclusions: Users are most engaged by videos and photos while questionnaires have the least interaction. Surveys and focus groups will evaluate overall effectiveness and challenges.The VIIth nerve is evolving and effectively connecting students internationally.

Take-home messages: Synergies between social networks and medicine is vastly underrepresented in the literature to date. In today's technological society, the implications of social media in the learning environment may be of significant value and affect the future practice of medicine.

8CC/13
"To see ourselves as others see us": A comparison of peer- and tutor-assessment of online student discussion boards

Paula Smith (*University of Edinburgh, Clinical Surgery, Edinburgh, United Kingdom*)
Emma Barron (*University of Edinburgh, Clinical Surgery, Edinburgh, United Kingdom*)
David Dewhurst (*University of Edinburgh, Learning Technology Section, Edinburgh, United Kingdom*)
Anna Paisley (*University of Edinburgh, Clinical Surgery, Edinburgh, United Kingdom*)
Peter Lamb (*University of Edinburgh, Clinical Surgery, Edinburgh, United Kingdom*)
O. James Garden (*University of Edinburgh, Clinical Surgery, Edinburgh, United Kingdom*)

(*Presenter:* Paula J.W. Smith, University of Edinburgh, Clinical Surgery, Royal Infirmary of Edinburgh, 51 Little France

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Background: The reliability of peer-assessment of online discussion boards, and its impact on student participation, was examined in a student cohort of junior surgical trainees.
Summary of work: The online MSc in Surgical Sciences programme utilises virtual case scenarios based on common surgical conditions, underpinned by basic science content. Assessment tools include asynchronous discussion boards facilitated by expert clinical tutors (consultant surgeons or senior surgical trainees). Marks awarded by students and tutors were compared for contributions to boards in Year 1 and 2 modules, to test the null hypothesis that peer-assessment is comparable to that provided by experienced e-tutors. Students and tutors were provided with detailed marking criteria, and an online anonymous questionnaire was used to gauge students' perceptions of peer-assessment.
Summary of results: In first year boards, peer-assessment marks were consistently greater than those of tutors (1.75 ± 0.79 vs. 1.62 ± 0.72; $P=0.02$: total assessments per group = 345, by 40 students and by 32 tutors), whereas in the second year, awarded marks were similar (1.81 ± 0.88 vs. 1.78 ± 0.85; $P=0.64$: total assessments per group = 342, by 47 students and 28 tutors). Introduction of peer-assessment did not impact significantly on the frequency of student participation. 46.5% of students believed that peer-assessment was beneficial, but the majority favoured tutor feedback (88.4%) and tutor marks (62.8%) (n=43 respondents).
Conclusions: Peer-assessment of student contributions to discussion boards improves with increasing experience.
Take-home messages: Peer-assessment of discussion boards can be a reliable and useful exercise for ensuring students cover course material, however, students surveyed would not support it as a replacement of expert tutor-assessment.

8CC/14
Internet usage among medical students in pre-clinical years at Srinakharinwirot University

Promjit Sriyabhaya (Srinakharinwirot University, Pathology, Bangkok, Thailand)
Patcharin Sangjaruk (Srinakharinwirot University, Pathology, Bangkok, Thailand)
Nantana Choomchuay (Srinakharinwirot University, Pathology, Bangkok, Thailand)

(Presenter: Promjit Sriyabhaya, Srinakharinwirot University, Pathology, 114 Soi 23 Sukhumvit Rd., Wattana, Bangkok 10110, Thailand, promjit@hotmail.com)

Background: The internet is increasingly being used in medical education as it provides instant access to information.
Summary of work: This study aimed to explore the extent and purpose of internet usage among medical students in pre-clinical years at Srinakharinwirot University, Thailand. A questionnaire-based study was conducted on 179 second and third year medical students in 2010.
Summary of results: The medical students who participated in the study were between 19-22 years old. Majority of the students frequently accessed internet from their personal computer at home (96%). The internet was accessed most often for entertainment (51%), class work (37%), social communication (10%) and others. For their study, medical students preferred internet over textbooks because of time saving (76%), easy accessibility (16%) and latest knowledge (8%). In problem-based learning, the students usually use the internet to access general information about diseases (66%), basic medical sciences (21%), diagnoses and treatments of diseases (10%) and recent advances (3%).
Conclusions: The results indicate that the medical students participating in the present study used internet to access medical information for preclinical study.
Take-home messages: However, the internet was more frequently used for pleasure by majority of students.

SESSION 9: Simultaneous Sessions
Wednesday 29 August: 0815-1000

9A Symposium: Assessing Clinical Teachers' Professional Behaviours

Yvonne Steinert *(McGill University, Canada)*
Meredith Young *(McGill University, Canada)*
Kiki Lombarts *(Academic Medical Center, University of Amsterdam, The Netherlands)*
Darcy Reed *(Mayo Medical School, USA)*
Fred Hafferty *(Mayo Medical School, USA)*

An obstacle to teaching professionalism is the unprofessional behaviour of clinical teachers. Valid and reliable assessment of their professional behavior is required for action. The symposium will present methods of assessment and data gathered in three countries, discussing large scale student and resident evaluation of faculty performance, linking student evaluation with patient assessment, and discussing the use of the information gathered. Modern information technologies, combined with valid measurement tools, now permit the accumulation of sufficient data to reliably measure the professional behaviors of clinical faculty.

9B Symposium: Postgraduate Professional and Generic Skills – The What and the How

Davinder Sandhu *(Severn Deanery, UK)*
Bernardo Bollen Pinto *(University of Porto, Portugal)*
Liz Spencer *(Gloucestershire NHS FT, UK)*
Olle Th.J ten Cate *(University Medical Center, Utrecht, The Netherlands)*

The role of a doctor is complex from being a healer, patient advocate to manager and budget holder. Professional medical training addresses primarily specialist knowledge of diagnosis and treatment. There is no defined curriculum of required Professional & Generic skills, nor who should deliver this and what constitutes good outcomes for trainees and patients. This symposium will explore and question these concepts in an interactive forum covering students, trainees and trainers.

9C Symposium: Medical Education in Latin America

Pablo Pulido *(Panamerican Federation of Associations of Medical Schools, PAFAMS)*

The Panamerican Federation of Associations of Medical Schools' (PAFAMS) mission is to maintain and develop excellence in the Schools of Medicine of the Continent. Harmonization of accreditation processes and certification of CPD endeavours require attention to meet expected outcomes. Skills and knowledge of medical graduates are key components to evaluate the effectiveness of education programs in medical schools and the impact this might have in the populations they serve. In addition the major focus is to assess the real needs and demands in medical education which have been obtained from focus groups and key opinion leaders not only from Academia but also from Health Care Services Institutions. Emerging domains deserving attention are: patient-physician relationships, information technologies and managerial skills; health policies and ethics or bioethics, among the most important ones. Major needs and demands in medical education are emerging with a trend to focus on the education of physicians that work in primary healthcare services with expectations to have a direct impact on the population healthcare demands and needs, thus representing an opportunity to enhance the satisfaction of the people receiving health attention. These initiatives give support to medical education projects, improve quality in health services and enhance capability of partners through coordination and consensus building. Likewise, in Ibero America the ultimate goal of medical education is to improve the health of the population served.

9D Communications courtes (en français): Evaluation des compétences

9D/1
Formation créditée en pédagogie des sciences de la santé: quels impacts pour les professeurs?

Diane Clavet *(Université de Sherbrooke, Centre de pédagogie des sciences de la santé, Sherbrooke, Qc, Canada)*
Richard Boulé *(Université de Sherbrooke, Centre de pédagogie des sciences de la santé / Départment de médecine familiale, Faculté de Médecine et des sciences de la santé, Sherbrooke, Canada)*
Daniel J Coté *(Université de Sherbrooke, Centre de pédagogie des sciences de la santé / Départment d'anethésiologie Faculté de Médecine et des sciences de la santé, Sherbrooke, Canada)*

(présentateur: **Sylvie Houde**, Université de Sherbrooke, Centre de pédagogie des sciences de la santé, Faculté de Médecine et des sciences de la santé, 3001, 12e avenue Nord, Sherbrooke, Qc J1H 5N4, Canada, sylvie.Houde@usherbrooke.ca)

Contexte: L'importance de la formation pédagogique des enseignants est soulignée par divers organismes, mais il existe peu d'informations sur ses impacts. En implantant un tel programme nous avons élaboré un plan pour documenter ses retombées.
Résumé des travaux: Une formation créditée est offerte aux enseignants. Dispensée par des experts pédagogiques et des praticiens des sciences de la santé, elle se caractérise par des activités liant étroitement théorie et pratique. Les impacts de la formation sont mesurés : en fin de formation par une échelle de compétence perçue; un an plus tard avec la même échelle, complétée par un groupe de discussion; au moyen d'un relevé prospectif de traces de pratiques pédagogiques.
Résumé des résultats: Les participants observent des changements dans leur approche pédagogique, incluant un sentiment de compétence accru. Ils rapportent que leurs

AMEE 2012

WEDNESDAY 29 AUGUST 2012

décisions pédagogiques sont maintenant basées sur des principes explicites. Certains font état d'exemples où ils jouent le rôle de consultant en pédagogie dans leur milieu.

Conclusions: Le programme de formation contribue aux impacts sur la compétence perçue et la pratique pédagogique des participants. La documentation prospective de leurs interventions pédagogiques fournira des données supplémentaires.

Messages à retenir: Étant donné l'importance de l'évaluation d'impacts de formation et des défis qu'elle pose, un plan prospectif multidimentionnel constitue une approche utile.

9D/2
Apport d'une auto-évaluation hebdomadaire des connaissances essentielles (AEHCE) associée aux enseignements magistraux de pneumologie à la faculté de médecine Lyon-Est

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Contexte: L'enseignement de pneumologie dans notre faculté repose sur le cours magistral, et utilise la plateforme pédagogique internet de l'université, dénommée SPIRAL. La promotion d'étudiants de DCEM2 (n=445) est séparée en 2 groupes, groupe 1 (n=221) et groupe 2 (n=224), qui alternent des périodes de stage hospitalier et de cours. Notre objectif a été d'évaluer l'effet d'une AEHCE sur la réussite au contrôle intermédiaire de fin de période de cours.

Résumé des travaux: Le programme d'AEHCE a été proposé sur SPIRAL pendant les 5 semaines de cours du groupe 1, alors que le groupe 2 était en stage hospitalier. Chaque test comportait 5 questions aléatoires (principalement cas cliniques avec questions à choix multiples), évaluant les connaissances délivrées en cours pendant la semaine précédente.

Résumé des résultats: La participation moyenne à l'AEHCE a été supérieure dans le groupe 1 (36% vs. 10% dans le groupe 2, p<0,001). Il existait une corrélation positive entre l'assiduité aux cours magistraux et la participation à l'AEHCE (p<0,001), et, dans le groupe 1, une corrélation entre le taux moyen de participation et la note moyenne aux tests d'AEHCE (p=0,001), et la note obtenue au contrôle de fin de période (p<0,001).

Conclusions: L'AEHCE améliore l'acquisition des connaissances délivrées pendant le cours magistral.

Messages à retenir: L'AEHCE améliore l'acquisition des connaissances délivrées pendant le cours magistral.

9D/3
Progression du niveau de compétence et exposition clinique des étudiants en stage: des outils utilisés pour le suivi au programme de Continuum Baccalauréat-maîtrise en physiothérapie

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Contexte: Il est essentiel de documenter l'exposition clinique des étudiants pendant leurs stages et l'évolution de leurs compétences pendant la formation pour répondre aux exigences universitaires et à celles d'organismes de réglementation. Il importe aussi de responsabiliser les étudiants.

Résumé des travaux: Deux outils informatiques ont été développés afin de 1) centrer les conversations et les actions sur le développement des compétences visées par le programme; 2) s'assurer que le programme offre une variété d'expériences de stage; 3) suivre l'évolution des compétences individuelles et des cohortes pendant le parcours académique.

Résumé des résultats: L'outil « PhysioFolio », permettant le suivi de l'exposition clinique, en est à sa quatrième session d'utilisation. Le sondage sur sa convivialité et son efficacité auprès des usagers (étudiants, superviseurs, responsables programme) nous a permis d'apporter des améliorations. L'outil « Compétences » en est à sa première session d'utilisation; les usagers seront sondés en juin 2012.

Conclusions: Le suivi des compétences et de l'exposition clinique représente de nombreux défis. La technologie offre des solutions intéressantes lorsqu'elle se développe dans le respect des discussions et des réflexions des usagers.

Messages à retenir: Des plateformes technologiques conviviales et flexibles peuvent être des outils puissants au service de la bonification d'un programme et des étudiants en formation.

9D/4
L'évaluateur : Caractérisation d'un rôle méconnu du superviseur-clinique

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Contexte: Les superviseurs cliniques adoptent différents rôles, notamment celui d'évaluateur. Même si ce rôle est capital, les habiletés requises pour l'effectuer adéquatement sont peu documentées. Il apparaît nécessaire de les

395 | P a g e

caractériser dans un premier temps afin de pouvoir ensuite en favoriser l'acquisition et le développement.

Résumé des travaux: Un sondage Web qui s'appuie sur les principes du Appreciative Inquiry a été effectué auprès des professeurs et des résidents d'un département de médecine d'une université canadienne. Les participants devaient 1-lister cinq et ensuite 2- choisir cinq (parmi 10) caractéristiques de superviseurs-cliniques reconnus pour leurs excellentes habiletés en évaluation.

Résumé des résultats: 17% des professeurs et 23% des résidents ont répondu au sondage. La capacité de faire une évaluation équitable, basée sur une observation directe semble être une caractéristique clé d'un bon évaluateur. Les professeurs considèrent qu'il est important que les évaluateurs aient suffisamment de connaissances et d'habiletés dans le domaine médical. Les résidents accordent beaucoup d'importance au feedback.

Conclusions: Cette étude a permis de mettre en lumière quelques caractéristiques d'un bon évaluateur. Des études futures sont requises pour explorer l'acquisition et le développement de ces habiletés.

Messages à retenir: Il est important de mieux comprendre le rôle d'évaluateur afin de favoriser le développement d'habiletés qui permettront une évaluation de qualité.

9D/5
Entente Québec – France : Résultats et suivi

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Contexte: L'arrangement de reconnaissance mutuelle (ARM) des qualifications professionnelles, entre le Québec et la France pour les médecins, est entré en vigueur en novembre 2009. Cette présentation fera l'état de la situation pour les médecins français qui désirent pratiquer au Québec pour les 28 spécialités visées, incluant la médecine de famille.

Résumé des travaux: Un résumé des conditions de l'entente sera présenté. L'analyse des données, incluant les résultats du stage d'adaptation (stage d'évaluation), sera présentée par spécialité de façon quantitative et qualitative. Les défis et enjeux liés à l'adaptation à la pratique au Québec seront explorés ainsi que les impacts sur les milieux de formation agréés des résidents.

Résumé des résultats: En date du 29 février 2012, 131 demandes écrites ont été reçues et traitées. Certains candidats sont en stage ou en attente du stage et d'autres l'ont complété. 37 permis ont été délivrés. Selon les champs de pratique, plusieurs personnes ont échoué le stage.

Conclusions: La réussite d'un stage d'adaptation à caractère évaluatif est nécessaire avant la délivrance d'un permis.

Messages à retenir: La pratique et l'organisation des soins au Québec diffèrent de ce qui prévaut en France.

9D/6
Maturation du raisonnement biomédical évalué par la discussion d'une vignette clinique multidisciplinaire : étude longitudinale et relation avec la capacité de délimitation des connaissances

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Contexte: Dans un curriculum médical comprenant des séminaires PBL, un Test de Concordance de Script nous avait permis de démontrer la maturation de la capacité de raisonnement, corrélée positivement avec la capacité de délimiter le champ de ses connaissances. L'objectif de la présente étude est de tester ces observations dans le contexte certificatif d'évaluation orale du raisonnement, sur base d'une vignette clinique discutée avec un collège d'enseignants.

Résumé des travaux: Les données longitudinales d'évaluation de 279 étudiants ont été utilisées de la 2ème à la 5ème année du curriculum. Elles comprenaient les scores à l'examen oral de raisonnement ainsi que les degrés de certitude aux tests de connaissances (QCM). La capacité de délimitation du champ des connaissances a été calculée sur base de la différence entre les degrés de certitudes aux réponses correctes et les degrés de certitude aux réponses incorrectes au QCM.

Résumé des résultats: Les résultats montrent, chez 213 étudiants qui réussissent d'emblée, une augmentation significative des performances à l'examen oral de raisonnement et une augmentation de la capacité de délimitation du champ des connaissances au cours des 4 années. Chez 66 étudiants qui échouent en 2ème année, cette capacité est plus faible et augmente l'année suivante après réussite de la 2ème année. Une corrélation positive entre les 2 indices étudiés est observée.

Conclusions: Cette étude confirme, dans un contexte certificatif longitudinal au cours du curriculum médical, la maturation du raisonnement et celle de la capacité de délimiter le champ de ses connaissances.

9D/7
Apprendre à Apprendre : Optimiser la réussite des étudiants en formant les étudiants et les enseignants

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Contexte: A partir du Bureau-Interface-Professeurs-Etudiants, (BIPE), structure de soutien pédagogique en médecine, un enseignement visant à optimiser la réussite des étudiants leur a été proposé en 3eme année.
Résumé des travaux: Les déterminants de leur propre réussite et les interventions possibles (cognition, stratégies d'apprentissage, mode de vie) leur sont enseignés. La majorité les étudiants n'avaient pas conscience avant la formation de l'impact du mode de vie et de la métacognition dans leurs études.
Résumé des résultats: -Globalement le contenu de l'UE est jugé «très intéressant» à «intéressant»: 95% ; pour leurs études «très utile» à «utile»: 79%; pour leur vie quotidienne «très utile» à «utile» : 74%. -L'intervention gestion du stress est jugée «très intéressante» à «intéressante»: 100%, pour leurs études «très utile» à «utile»: 90%. -L'intervention sommeil est jugée «très intéressante» à «intéressante»: 100%; pour leurs études «très utile» à «utile»: 82%. -Les intentions de changements (EVA, 0/100mm, médiane/max-min): «Apporter des modifications à la manière d'apprendre un cours» (66mm, 94-17); «réviser pour un examen» (60mm, 88-00), «Appliquer des méthodes de gestion du stress» (60mm, 88-00).
Conclusions: Apprendre à Apprendre se développe dans plusieurs filières de l'enseignement supérieur, et par une formation pour les enseignants.
Messages à retenir: Enseigner les déterminants de leur réussite aux étudiants pour l'optimiser.

9E Short Communications: Feedback 2

9E/1
How do non-verbal and verbal communication affect feedback dialogues?

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Background: Feedback is not always effective, for example because the learner does not ' receive' the provided feedback. In daily life we receive a lot of information from non-verbal behavior. Can feedback providers check if the

feedback message is understood by the learner, by observing learner's non-verbal behavior during feedback dialogues?
Summary of work: To answer this question a literature search was carried out in PubMed, PsycINFO and ERIC (English language; peer-reviewed; 1999-2009). The search terms used were related to different types of non-verbal behavior, verbal behavior and communication. Two raters rated the abstracts, and inclusion and exclusion criteria were applied.
Summary of results: 1320 abstracts were identified. After application of the in- and exclusion criteria 147 articles were included. A few articles described the relation between feedback and non-verbal behavior explixitly. The general communication literature describes five themes related to non-verbal behavior: eyes, head movements, facial expressions, gestures and postures. Related to verbal-behavior the following themes came uo: smiling, pausing and postures while communicating.
Conclusions: Literature on (non-)verbal behavior related to feedback is scarce, however the literature on communication and (non-)verbal behavior provides information which also can be applied to feedback research and used for practical purposes, such as observing whether a learner understands a message.
Take-home messages: As feedback providers we need to become aware which non-verbal behavior we should look for.

9E/2
The Competency-Based Achievement System (CBAS): Using formative feedback to teach and assess competencies with Family Medicine residents

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Background: The Competency-Based Achievement System (CBAS) is a novel learner-driven competency-based assessment framework. CBAS is guided by these key principles: 1) Assessment should be for learning; 2) Assessment should include direct observation in clinical settings, and; 3) Assessment should focus on the habits being developed. With CBAS, we assess and guide progress towards becoming a good family physician.
Summary of work: We evaluated the uptake and educational value of CBAS using mixed methods. Residents (n=154), advisors/preceptors (n=56), and program directors (n=2) participated in focus groups. We also surveyed actual use of CBAS, examining documented formative feedback (FieldNotes), and the utility of CBAS in identifying and serving as a remediation tool for residents in difficulty.
Summary of results: Over 6000 FieldNotes are in the CBAS electronic system. Most FieldNotes are about medical knowledge clinical reasoning. Residents, preceptors, and program directors find CBAS more transparent and useful

than traditional assessment. In particular, CBAS has been found very useful in remediation with residents who are not progressing well. Feedback from users indicates that training in the use of CBAS for summative assessments is still needed.
Conclusions: Implementation is proceeding well, but more training/faculty development is needed.
Take-home messages: CBAS is a functional alternative to traditional resident assessment practices.

9E/3
Towards a more effective use of multisource feedback in residency training

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Background: For purpose of professional development, multisource feedback (MSF) was introduced in residency training programmes throughout the Netherlands. Results are discussed directly with clinical supervisor, thereby increasing the risk that MSF is used as a tool for appraisal, rather than for development. We sought to protect its developmental purpose and to increase the effectiveness.
Summary of work: Instrument used: Multisourcefeedback.nl (M.A. Horsman et al.). An expert guided the entire process, discussed results with each resident. Residents wrote a reflection report. In case resident had additional questions about feedback, expert arranged contact (after informed consent) of respondent and resident. Procedure was evaluated through interviews.
Summary of results: Within 6 months 21 residents were included, 17 completed the procedure. Eighty-five percent agreed there was added value in discussion by expert. Fifteen percent mentioned they could have had the discussion with supervisor. They noticed this would depend on relationship with supervisor and on outcomes. Supervisors were positive because this procedure contributed to development of residents in a safe and constructive way, whereby their own workload was minimal.
Conclusions: Study shows added value in independent expert in MSF- procedure. Tool is then used strictly for developmental purposes. Residents and superiors were highly satisfied.
Take-home messages: Separate development and appraisal.

9E/4
Coaching the coaches - Use of a novel faculty development tool to improve feedback to medical residents

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Background: The development of medical competence is, at its simplest, a two-stage cycle involving deliberate practice on behalf of the student, and the delivery of effective feedback by the preceptor. While the best practices of medical feedback, or cognitive coaching, are known, the quality of feedback provided by medical faculty remains heterogeneous.
Summary of work: This project used a novel tool to evaluate the quality of written feedback provided by medical educators to residents. Written feedback was graded on its presence, relation to directly observed events, specificity, and degree of prospective guidance. Preceptors whose feedback was analyzed then received targeted coaching on how to improve their feedback.
Summary of results: A follow up analysis demonstrated improvement in the quality of preceptors' feedback, and an increase in the breadth of feedback across all CanMEDS domains.
Conclusions: This tool is the first of its kind to be used for intensive, one-on-one faculty development for medical teachers. The impact of coaching the coaches is that learners subsequently receive ideal coaching themselves.
Take-home messages: The delivery of effective feedback in the workplace is a pillar of competency-based education. Successful formative feedback allows residents to progress faster, be remediated sooner, and develop a clearer understanding of their overall competence.

9E/5
Electronic marking: does it affect grade or time to mark?

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Background: The University of Edinburgh's MSc Clinical Education is an online postgraduate programme for clinicians interested in education. Assessment is by submission to an eportfolio. Assignments are double-marked by faculty; students receive a breakdown of marks and comments via the eportfolio. Faculty annotate scripts whilst marking, but limited comments were returned to students. We sought to explore whether providing annotated assignments for students would be practical and would improve the quality of feedback to students.

Summary of work: 51 student assignments were submitted and randomised to two groups. Group A was marked conventionally by Marker 1, and using an iPad and PDF annotation programme by Marker 2. Work from group B was marked conventionally by Marker 2, and using an iPad by Marker 1. Marks were combined in the usual way; students received both the conventional summary and the annotated script.

Summary of results: Mean time to mark on paper was 23.1min, less than the mean 25.9min taken electronically. Marks did not vary with marking format (mean 61.8% paper, 61.7% electronic). Marks did not differ between markers (mean 61.7 Marker 1 and 62.4 Marker 2).

Conclusions: Marking took longer using iPads (perhaps related to markers unfamiliarity with the system). Both markers preferred electronic marking. Stated benefits include convenience and eliminating the need for paper copies. Students were supportive of the initiate, feeling that the feedback on their work was improved.

Take-home messages: Electronic marking of online students work is preferred by both staff and students; is intuitive and requires no special training.

9E/6
Can having assessment with formative feedback prior to the intern year bring junior doctors closer to improving patient safety and quality outcomes?

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Background: The procedural skills competency of final year medical students pre-interns (PRINTS) from a large city university clinical school is varied and an unknown quantity as these skills are not usually assessed prior to the students graduating from medical school.

Summary of work: PRINT students n=50 were asked to fill in a five point Likert scale questionnaire to elucidate factors that they considered in their ability to perform the procedural skill of male catheterisation on live patients. The students were then assessed under direct observation on manikin and given formative feedback. The data is collected, paired and analysed. A follow up focus group was held to explore final year student's level of confidence, competence and their overall experience in performing male catheterisation, prior to becoming Junior Medical Officers (JMOs).

Summary of results: Data analysis indicated that there was a variation between the student's perceived competence in performing the skills and their overall performance.

Conclusions: The experiences of the JMOs will be varied .Adjustment will be needed to take into account those who have had more exposure to the procedural skill e.g. those who have worked in urology.

Take-home messages: The students reported to have gained huge benifits from being given a one to one assessment and feedback session.

9F Short Communications: Student Characteristics and Learning Styles

9F/1
First year medical students: Are they called to the vocation of medicine?

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Background: The construct of calling has recently been applied to the vocation of medicine. This study sought to answer the question whether medical students endorse a presence of a calling or a search for a calling when they first begin medical school.

Summary of work: 431 first-year US medical students (84% response rate) were administered the Brief Calling Survey upon starting medical school in 2008, 2009 and 2011.

Summary of results: For presence of a calling items, the median response was mostly true of me for "I have a calling to a particular kind of work" and "I have a good understanding of my calling as it applies to my career". For search for a calling items, the median response was mildly true of me for "I am trying to figure out my calling in my career" and "I am searching for my calling as it applies to my career".

Conclusions: Students embarking on a career in medicine express a presence of a calling to medicine more than a search for a calling. They feel called to the profession and understand calling as it relates to physicianhood.

Take-home messages: First-year medical students were more likely to endorse having a presence of a calling rather than a search for a calling.

9F/2
Managing the National Registration and the Assessment of Health and Conduct of Medical Students at an Australian Medical School

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Gary Hamlin (*Bond University, School of Medicine, Gold Coast, Australia)*

Linda Crane (*Bond University, Faculty of Health Sciences & Medicine, Gold Coast, Australia)*

Audrey Chung (*Bond University, School of Medicine, Gold Coast, Australia)*

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Background: In 2011 Australian medical students were required by law to be registered with the National Medical Board. In addition medical schools were legislated as mandatory notifiers of students with health or behavioural concerns that placed the public at substantial risk of harm. In response to this Bond University and the School of Medicine developed a co-ordinated "Fitness to Practice" policy.
Summary of work: A policy was developed that directed students who exhibited either health or professional behavioural to appear before a School Health and Professional Conduct Committee (SHPCC). This action occurred after the student had been warned by both Deputy and Head of School. The SHPCC was given the authority to place the student on an academic warning and mandate that the student comply with a Health and Professional Conduct support plan. The intent and effect was to carry the same academic penalty as failing a year. The policy mandates that if the behaviour continues the matter can be escalated to University Discipline committee who can exclude the student from the Medical School.
Conclusions: This presentation will discuss de-identified student cases that will demonstrate how the implementation of this policy has allowed the school to develop a staged response to poor student behaviour that imposes an academic penalty on students for demonstrating a lack of professionalism.
Take-home messages: Assessing Professionalism as an academic rather than as a behavioural output is the key to the appropriate academic management of challenging medical students.

9F/3
Undergraduate medical student experiences of bereavement

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Background: Bereavement has implications for students' personal development and academic achievement. Confronting death is particularly important for medical students, whether in terms of their curriculum experience such dissection or palliative care, or their experience as a junior doctor. Little is known about the scale and impact of medical students' personal experiences of bereavement.
Summary of work: Since 2007 medical students entering the preclinical or clinical courses at Cambridge University have provided data about experience of bereavement, as part of an on-going longitudinal study. Data have been collected about relationship to the deceased person(s) and repeated experiences of bereavement.
Summary of results: Of the 726 preclinical and 295 clinical students participating on entry 28.4% and 29.1% respectively had experienced bereavement prior to commencing their course. 224 preclinical and 157 clinical students repeated their participation of these, 29% and 35.7% respectively experienced bereavement during the first two years of their course.
Conclusions: Both prior to starting and during their course many medical students experience personal bereavement. The scale of this experience may be larger than is generally appreciated.
Take-home messages: When designing courses medical educators need to be sensitive to the fact that many of their students will have experienced bereavement and for many that experience is recent or current.

9F/4
Medical student change: A new perspective

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Background: On entering the workforce, young people change, both positively and negatively, their understanding of themselves, their new environment and their role in it –i.e. they experience self, reality, and role construction. Negative changes in medical students have been reported in the literature.
Summary of work: Seventy eight medical students at the end of their first clinical year wrote about how they had changed. Essays were qualitatively analyzed.
Summary of results: Changes that emerged: 1.) Self-construction: students were motivated to learn by the patients they saw, and felt more responsible, confident, able

to handle work load and manage time. 2.) Reality construction: clinical medicine differed from students' expectations; they were disappointed in physician role models, and recognized and regretted the limitations of medicine and the medical system. 3.) Role construction: reality shift triggered a resolve to be a 'better' physician, clarified their goals and ideals and reinforced their career choice.

Conclusions: Medical students develop and change like other young people entering the workforce. Changes in self, reality and role construction in our group of medical students seem to indicate positive professional growth.

Take-home messages: Negative changes in medical students must not be viewed in isolation but as the inevitable re-construction that all young people undergo as they begin their careers.

9F/5
Learning styles among paramedical students in Babol University of Medical Sciences

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Background: Learning style is one of the effective factors in educational progress and it is considered as an important individual difference. Recognition of learning styles led to adjusting the instructors' teaching method and helped them to broaden their range of presentation styles. The purpose of the study was to determine the learning styles among paramedical students in Babol University of Medical Sciences.
Summary of work: This was a cross sectional study which was done on 95 paramedical students in stratified random sampling in fall 2011. Data were collected using David A. Kolb's Learning Style Inventory including 12 questions and 4 types of learning styles. The analysis of data based on LSI guide was done by SPSS.19.
Summary of results: 57.9% were females. The mean age was 20.8 ± 1.26. Radiology technology students comprised 29.5% and nuclear medical students constituted 6.9% of overall population. Most of the students were as assimilator (43%) and others were diverger (36.1%), converger (13.8%) and accommodator (6.9%). There was a significant correlation between age and learning styles (P=0.001).
Conclusions: According to the results, more students used assimilator learning styles and they were more interested in logic than precision of correctness and application. it is recommended that faculty members use visual methods, diagrams, teacher's handouts, lecture and self learning methods.

9F/6
Use of a Personal Improvement Project (PIP) as a Tool for Teaching Quality Improvement to Preclinical Medical Students

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Background: Ross University School of Medicine introduces systems and quality improvement (QI) to preclinical students through lectures, cases, and problem-based learning. Students apply these concepts in a personal improvement project (PIP) in order to experiment with a small change that is under a student's personal control – using data – and to reflect on the challenges of making personal and healthcare system changes.
Summary of work: Third semester students identify areas to improve in their daily lives. Over 10 weeks (spanning semesters 3 & 4) students use system analysis and QI methods such as process modeling tools and Plan-Do Study-Act cycles. The students reflect upon how their PIP work is related to their future work in healthcare.
Summary of results: Since May 2011, more than 400 students have completed a PIP. Students have improved sleep habits, study schedules, and weight loss. Many identify clear connections between their PIP and healthcare QI.
Conclusions: Teaching systems and QI is standard in graduate medical education. Introduction of these competencies in the preclinical curriculum prepares students for their post graduate years. Our students effectively apply system analysis and QI methods in PIPs.
Take-home messages: PIPs are an effective tool for preclinical experiential learning for students about systems and QI.

9G Research Papers: Randomized Controlled Trials and Mixed Methods

9G/1
Using mental practice and modeling to enhance knowledge acquisition in medical education harnessing novel podcast technology

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Introduction: The ability to provide optimal learning opportunities for medical trainees remains a challenge due to mandated reduced clinical working hours and increased number of trainees[1-2]. One way to meet this challenge is to supplement reduced learning opportunities with the use of electronic-learning, specifically podcasts. However, there is currently little research regarding the most effective manner to utilize e-learning opportunities.

The goal of this study was to identify the optimal methods to enhance podcasts to teach complex medical content involving decision-making. As such, we examined the role of different approaches for presenting podcast medical content based on two learning strategies: mental practice and modeling.

Modeling involves the trainee being able to view a demonstration of what needs to be learned. It has been extensively studied as a means of teaching new behaviors and has been specifically shown to enhance the development of motor skills and higher-level cognitive processes[3]. Mental practice [MP] is defined as the cognitive rehearsal of the task steps. It has been extensively investigated in the domains of athletic training, military exercises, and recently surgical education[4-5].

Methods: Fifty-six medical students participated in this prospective randomized controlled trial. Students were assigned to one of four groups: control (no modeling, no MP), modeling, MP, combined modeling and MP. Students viewed one of four versions of the podcast, according to their randomization group. One week later, students were asked to manage an airway crisis during a mannequin-based simulation. Knowledge was assessed by multiple-choice pre (baseline) and post-intervention (one-week retention) quizzes. This abstract reports the results of the knowledge assessments.

Results: A two way mixed ANOVA of the knowledge scores was conducted, with time (pre/post intervention) and group (control, MP, modeling, MP+modeling) as the between subject variable. There was a main effect of time (p<.01) and a significant time by group interaction (p<.05) across all groups. A subsequent one-way ANOVA of the pre-intervention quiz scores showed no significant differences between the groups at baseline (range 50%-56%, p=.65). However, a one-way ANOVA of the post-intervention quiz scores revealed a main effect of group (p<.01). Paired T-test comparisons revealed that the MP and modeling groups showed significantly higher post-intervention scores than the control group (MP= 73%, modeling = 72%, control = 61%, p<.05). The combined MP+modeling group had significantly higher post-intervention scores than all other groups (MP+modeling = 81%, all p<.05).

Discussion: Appropriate airway management is a complex cognitive process involving decision-making rather than simple recall of algorithms from memory. Our study noted significant improvements from pre to post-test scores across all groups. However, the effectiveness of podcasts for knowledge acquisition can be enhanced with the addition of either MP or modeling, with the most significant improvements resulting from the combination of both learning strategies.

Conclusions: The recent advances in technology are bringing many innovations to the education of health professionals. As shown in this study, the specific learning strategies that are embedded within them will significantly impact on their effectiveness.

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9G/2

Within-Team Debriefing versus Instructor-Debriefing for Interprofessional Simulation-based Education: A Prospective Randomized Trial

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Introduction: Teamwork performance during crisis management in the operating room (OR) is important for patient safety.[1] In interprofessional simulation, these skills are usually taught by a trained instructor. One of the main costs to implementing an interprofessional simulation curriculum is finding instructors with appropriate training and

dedicated time. A within-team debriefing, led by the individuals of the team itself rather than an external instructor, has the potential to address this barrier. This study compared the effectiveness of within-team debriefing to that of instructor debriefing on interprofessional team performance during a simulated operating room crisis.

Methods: After Research Ethics Board approval, 120 participants were grouped into 40 teams consisting of one anesthesia resident, one surgical resident and one staff circulating OR nurse. An actor played the scripted role of an OR scrub nurse. All teams managed a simulated crisis scenario (pretest). Teams were then randomized to either a within-team debriefing or an instructor debriefing. In the within-team debriefing group, the teams reviewed the video of their scenario by themselves, with a debriefing guide based on the Ottawa Global Rating Score scale. The teams in the instructor debriefing group reviewed their scenario, guided by a trained instructor. Immediately following debriefing, all teams were recorded managing a different intraoperative crisis scenario (posttest). After data collection, three blinded expert examiners (one anesthesiologist, one OR nurse, one surgeon) rated all team performances in a random order using the validated TEAM scale.[2] Total TEAM score ranges from 0 (minimum) to 44 (maximum).

Results: The average measure inter-rater reliability for the total TEAM score was 0.78 (p < 0.001), as measured by the intra-class correlation. Team performance of within debriefing group improved from (Mean±SD) 24.15±7.83 to 28.07±6.47. Team performance of the instructor debriefing group improved from 25.10±6.41to 27.53±7.17. A two-way, mixed ANOVA detected a significant improvement in team performance from pretest to posttest ($F_{1,38}$ =7.93, p=.008) with no significant effect of the debriefing type received ($F_{1,38}$ = 0.01, p=.91). The effect of debriefing modality showed no interaction with respect to pre or post test performance ($F_{1,38}$ = 0.43, p=.52).

Discussion: Our data builds on earlier work on formative self-assessment as a reflection process at the level of the individual.[3] Within-team debriefing is a reflective process led by the team itself, rather than an external individual. Within-team debriefing relies not only on formative self-assessment, but also adds a formative peer-assessment component to the reflective process. Each team member reflects both on their own performance and peer performance, and shares this with team members in order to improve the whole team performance. Formative peer-assessment may help self-assessment because by judging the work of others, trainees might gain insight into their own performance, which leads to further shared reflection.

Conclusions: Within-team debriefing results in measurable improvements in team performance in simulated crisis scenarios. Within-team debriefing may be as effective as instructor team debriefing for interprofessional team-based simulation, which could improve cost-effectiveness and flexibility of scheduling.

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9G/3

Narratives in Numbers: Overall Teaching Performance of Faculty Predicts Residents' Generosity with Narrative Feedback

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Introduction: In the continuum of education in the healthcare professions, residents' transition to independent practice often occurs during graduate medical education (GME). Since GME is typically workplace-based, residents rely mostly upon their supervisors for training and supervision. In order to optimize teaching performance, faculty receive individual feedback from their residents, including numerical and narrative feedback. Narrative feedback has shown to be beneficial in previous research but there is lack of knowledge on the frequency and predictors of narrative feedback for faculty involved in GME. Using a quantitative approach, this study aimed to elucidate the frequency and predictors of giving and receiving positive comments and suggestions for improvement.

Methods: The well-researched System for Evaluation of Teaching Qualities (SETQ) was developed to generate numerical and written feedback for faculty about their teaching performance. From September 2008 to May 2010, 964 faculty and 839 residents representing 56 residency programs in 20 (non-)academic hospitals were invited to participate. We used the number of positive comments and suggestions for improvement as outcome variable and hospital and participant characteristics as predictor variables.

Results: In total, 659 residents (response rate 79 percent) completed 6,216 evaluations on 917 faculty, resulting in a total number of 11,574 positive comments and 4,870 suggestions for improvement. On average, each resident provided 17.5 positive comments and 7.4 suggestions for improvement, resulting in a mean of 12.5 positive comments and 5.3 suggestions for improvement received per faculty. Multivariate analysis revealed non-academic hospitals (regression coefficient 0.145; 95% confidence interval 0.087-0.202), attending a teacher-training course (0.109; 0.056-0.163) and female residents (-0.203; -0.255- -0.152) to be predictors of receiving more narrative feedback. Higher teaching performance was positively associated with the number of positive comments (0.538; -0.613- -0.464) and negatively associated with the number of suggestions for improvement (-0.802; 0.109-0.283]).

Discussion: 'Critiquing your boss' might be difficult for residents when providing 'bottom-up' feedback. However, residents provided narrative feedback to 93 percent of all faculty, in contrast to an earlier study amongst physician colleagues, that reported only 38 percent of respondents recorded narrative feedback [1]. Furthermore, our finding

that high or low overall teaching performance correlates with more positive comments or suggestions for improvement respectively is in line with previous research[1,2].

Conclusions: Residents' narrative feedback mirrors the teaching performance and needs of faculty as measured quantitatively. Since written comments were provided to those who needed them most, faculty may use the narrative feedback to improve their teaching performance.

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9G/4
A pilot project to explore the determinants of knowledge use in a medical education context

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Introduction: While the science of knowledge translation (KT) has been growing steadily for the past decade in relation to understanding processes and actions which are embedded within clinical practice settings, little is known about the how empirical knowledge is used within the medical education system. Despite an increase of research in this domain, we know very little about the application of this evidence in the development of medical students into effective physicians.

Methods: This pilot study employs a sequential mixed methods approach (Creswell 2009) and consists of three overlapping phases. Phase 1. A scoping review of the medical education research literature was undertaken to generate insight into the evidence available for curriculum development, teaching and assessment activities within this domain. Phase 2. A content analysis of undergraduate (UG) medical courses at one site (a large Canadian university) was conducted to generate additional insight into the extent that medical education research has been formally integrated into the undergraduate medical curriculum. Phase 3. A purposeful sample of 30-40 medical education leaders at the university are currently being interviewed to explore their use of available evidence in their education practices.

Results: Findings from phase 1 highlight key areas of focus within the medical education research literature. These findings reveal that the available evidence is limited and more rigorous studies are needed to inform curriculum development, teaching and assessment activities. Findings from phase 2 suggest that a small number of areas for which there was evidence for from the scoping review are explicitly utilized in the undergraduate curriculum. Findings from interviews with medical education leaders, in phase 3, will allow us to further investigate these findings.

Discussion: This pilot study provides a rare synthesis of the evidence for educational strategies within medical education. It also explores the perceptions and experiences of faculty in UG medical education in relation to their use of evidence in their educational practices and illuminates how medical education evidence is formally integrated into an UG medical curriculum. Initial data is generated into the determinants of knowledge use in a medical education context.

Conclusions: This study will inform the development of a larger, pan-Canadian study of medical schools that will generate a comprehensive account of the processes and challenges related to knowledge translation within an educational context. This larger study will also begin to explore the relevance of the Knowledge-to-Action model (Graham et al 2006) to a medical education context.

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9G/5
Just in time? Mobile learning as a support for trainees in the workplace

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Introduction: Wales Deanery funded "iDoc project" offered trainee doctors in Wales a Smartphone and software application containing medical textbooks with across-text searching facility. The intervention aimed to assist workplace learning by providing 'just-in-time' access to reliable information, tailored to individual need. Targeted at Foundation trainees the intervention also sought to support transition. The iDoc evaluation draws on Ellaway's[1] framework of factors to explore contextual mobile learning[2] (what works, how, when?), providing narrative accounts of education technology in action[3] within the broader context

of use of workplace information sources. Research ethics approval was obtained from Cardiff University.

Methods: Baseline and exit questionnaires collect data on frequency, type, usefulness and variation in device use alongside other workplace information sources. Participants complete narrative case reports detailing specific instances of device usage in action.

A questionnaire distributed to 260 foundation year 2 (FY2) trainees (including 21% iDoc participants) explores workplace information-seeking practice. Questions were developed from discussion with 175 trainees across Wales in 2010. Data are reported here from 193 iDoc baseline questionnaires, 36 case reports and 260 FY2 questionnaires.

Results: From the FY2 survey and iDoc baseline data the most frequently used information sources in the workplace on a daily basis were: senior medical staff (80% FY2 dataset and 79% iDoc baseline); peers (70%; 58%); and other staff in the medical/nursing team (53% both datasets). Electronic textbooks/journals were accessed using a mobile device at least weekly by 33%/32% (FY2 survey/iDoc baseline). Mobile devices were used more frequently by males (p<0.01 both datasets). FY1 (newly qualified) was judged as the most useful time to have such devices. Reasons related to increased responsibility, lack of knowledge and experience and needing quick answers. Preference of information source varied by problem-type. Three hypothetical scenarios were presented in the FY2 survey: information-based (drug dosage), problem–based (investigation of weight loss), skills-based (performing lumbar puncture). Information-based scenario showed preference for hardcopy textbooks/journals (89%); problem-based scenario, for senior medical staff (87%); skill-based scenario for hardcopy texts, seniors and internet (75%;74%;70%). Case reports were categorised by problem-type: information-based (n=24), problem-based (n=8), and skills-based (n=4). Primarily, mobile technology was used: (a) as a 'just-in-time' information-source in daily clinical practice, particularly when other sources were unavailable (e.g. when remotely supervised) or to prepare trainees for discussion with seniors; (b) as a resource for context-based teaching in clinical settings.

Discussion: Variations in preferred information source raise implications for training: Should support be sensitive to gender, level of supervision and times of transition? Is training needed on the most appropriate information-source for problem-type? Can a mobile information device make better use of discussion with seniors? This presentation provides the context for exploring these and other questions.

Conclusions: A variety of information-sources are regularly used in the workplace. 'People-based' resources are important and used daily but are not always available. In times of transition[4] constant access to a searchable mobile library of texts is a valuable support and, recognising the social process of learning[5] offers scope to make best use of people-based discussion.

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9H Short Communications: Junior Doctor as Teacher

9H/1
A near-peer teaching programme for clinical medical students enhances confidence and perceived ability in the clinical environment

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Background: A junior doctor led, bedside teaching programme was established at a large teaching hospital. Each tutor taught up to 5 clinical medical students on a voluntary basis for 6 months. We evaluated the impact of the programme, as perceived by the students and tutors.

Summary of work: Prior to the programme we asked students to score themselves and tutors to score students on: confidence in the clinical environment, examination skills, and presentation of findings; ability to perform examinations and present findings; demonstration of clinical reasoning skills; and overall ability in relation to peers. A ten point Likert scale was used in all cases. The same questionnaire was repeated after completion of the programme and scores were compared.

Summary of results: Students tended to rate themselves lower than tutors in all domains. There was a significant difference in mean scores of students before and after the programme (as calculated by dependent t-test, t = 3.365 p<0.01), and of tutor ratings of students (t=4.280 p<0.01).

Conclusions: This near-peer small group teaching programme had a beneficial effect on students self-rated confidence, and perceptions of their ability to perform core examination techniques, present findings and demonstrate clinical reasoning. These improvements were mirrored by tutors' views of the students' confidence and abilities.

Take-home messages: Sustained contact with a junior doctor can have a significant impact on the confidence and skills of clinical medical students. Programmes such as this can

recreate positive aspects of apprenticeship, difficult to deliver within modern educational and clinical frameworks.

9H/2
Benefits for all from a junior-doctor led teaching programme for clinical medical students

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Background: Bedside teaching is highly valued by student and teacher alike. Delivering such teaching within an increasingly busy, resource-stretched health service is challenging. There is a potential protective role for formalising junior doctor-led bedside teaching.
Summary of work: A pilot study was performed in a teaching hospital to establish the feasibility and efficacy of a trainee-led, trainee-delivered bedside teaching programme for 240 clinical medical students. Teaching was delivered on a voluntary basis and the programme was evaluated using anonymised questionnaires.
Summary of results: 98% of responding students would recommend the programme to peers and 98% said the content of the tutorials was appropriate to their level of training. 95% of teachers felt that participation improved their teaching skills and 98% would recommend the programme to other trainees. Both groups gave positive free-text feedback regarding personal and professional development.
Conclusions: This teaching scheme was effective in teaching a large group of medical students and simultaneously developing trainees' abilities as medical teachers, with personal and professional gains extending beyond the original aims of the programme. This model could be easily applied to other institutions.
Take-home messages: A trainee-delivered bedside teaching programme for clinical medical students is cost-neutral and has benefits for all: the student, the trainee, the institution, and ultimately the patient.

9H/3
A fresh colleague, but a very experienced teacher - A Swedish experience from peer teaching taken to the next level

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Background: In 2011 Uppsala University Hospital started employing newly-graduated medical students as 50% clinical doctors and 50% clinical teachers before their foundation year training.
Summary of work: These 50/50 doctors/teachers do traditional clinical work as junior doctors at the emergency department and in medical or surgical wards. Their teaching is on courses in emergency medicine during year three and five in the medical program mainly in the clinical skill center and as clinical supervisors at the emergency department. The aim for this study is to explore experiences as junior doctors and peer teachers and also evaluate the effect on clinical teaching. Method for exploring experiences as junior doctors and peer teachers is a small focus group. Method for evaluating the effect on clinical teaching will be the since long up and running student rating program.
Summary of results: The junior doctors were pleased with working 50/50 as doctors and teachers and positive to combine clinical work with teaching. One dilemma with being newly-graduated and teaching students in year five may be that you may have to examine students you know.

9H/4
Exploring the barriers to bedside teaching faced by Core Medical Trainees

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Background: Bedside Teaching (BST), although generally declining, remains an important method for teaching clinical skills to medical students.
Summary of work: This study aimed to explore the barriers to BST faced by Core Medical Trainees (CMTs) and to identify areas needing improvement. In March 2012, surveys were distributed to all CMTs at King George and Queen's Hospitals in Essex, UK.
Summary of results: Nineteen out of 22 CMTs responded to the survey. The majority (68%) described their frequency of performing proper BST sessions as either rare or occasional. Nine CMTs (47%) had no formal training on teaching methods and only 4 received training on bedside teaching skills. Nevertheless, almost all CMTs (95%) expressed interest in bedside teaching. The major obstacles identified by trainees were time constraints, deficient institutional appreciation of teaching and interruptions by visitors, noise and pagers. The

trainees felt they needed protected times for teaching in order to improve their skills.

Conclusions: The study shows reduced time spent by trainees on proper bedside teaching. The reasons for this appear to be directly related to the workload on the wards.

Take-home messages: BST should be integrated into the training curriculum and trainees should be allocated teaching slots on regular basis. All CMTs must be offered training on BST methods.

9H/5
What training is needed in the undergraduate syllabus to prepare foundation doctors for their educational role?

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Background: Anecdotally Foundation Year (FYs) doctors teach from early on in their careers. Although training in teaching skills is now a required part of the Undergraduate (UG) curriculum (Tomorrow's Doctors 2009), what this curriculum should cover is unclear.

Summary of work: A paper questionnaire was administered to Tayside, Scotland FYs investigating their educational role. Questions included: level of involvement; methods used; training already received; training needed; support received; and attitude to teaching. The questionnaire was a mix of five-point Likert, check -boxes and free-text.

Summary of results: The response rate was over 70% (121/171), of whom 95% were involved in teaching. Facilitating small group teaching, bed-side teaching and teaching in clinical skills centre/simulated environments were the most common activities. Over half wanted further training in teaching skills. Most (over 80%) felt not enough time was allocated for this role, the main barrier being clinical workload. FYs who had been involved in UG peer-tutoring programmes (58%) were more confident about their teaching role.

Conclusions: Most doctors are involved in teaching from early on in their careers. The UG syllabus for educational skills should reflect FYs' needs and experiences to ensure relevance and efficiency.

Take-home messages: The UG training for educational role syllabus must be informed by FYs' needs and experiences.

9H/6
Impact of a Resident-as-Teacher Training Workshop on Student Perceptions of the Clerkship Learning Environment

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Background: Since their introduction, the impact of Resident-as-teacher (RaT) training programmes on the attitudes, knowledge and skills, and teaching behaviour of residents have been thoroughly investigated. There, however, is little known about how RaT programmes impact student learning outcomes and perceptions towards the clerkship learning environment.

Summary of work: A two-day RaT Workshop was implemented for interns at a major tertiary teaching hospital in November 2009 and throughout 2010, the Department of Surgery Student Learning Environment Questionnaire (DOSSEQ) was used to evaluate the perceptions of Year 4 medical students towards their General Surgery clerkship learning environment at this intervention hospital and at two other comparable control hospitals simultaneously.

Summary of results: A total of 115 (93%) questionnaires were returned: 46 from the intervention hospital and 69 from the controls. Students reported that a number of clerkship features were significantly better at the intervention hospital including effectiveness of resident teaching, integration of students into clinical teams, and overall enjoyment of the clinical experience.

Conclusions: A RaT Workshop for interns had significant positive impacts on student perceptions towards their General Surgery clerkship learning environment. Further investigative efforts, using qualitative methods, should focus on the processes and underlying mechanisms by which RaT interventions bring about these effects.

9I Short Communications: Social Responsibility

9I/1
Delivering on Social Accountability: Canada's Northern Ontario School of Medicine

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Bruce Minore *(Lakehead University, Centre for Rural and Northern Health Research, Thunder Bay, Canada)*
John Hogenbirk *(Laurentian University, Centre for Rural and Northern Health Research, Sudbury, Canada)*

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Background: The Northern Ontario School of Medicine (NOSM) has a social accountability mandate to contribute to improving the health of the people and communities of Northern Ontario.

Summary of work: NOSM and the Centre for Rural and Northern Health Research (CRaNHR) used mixed methods that include administrative data from NOSM and external sources, as well as surveys and interviews of students, graduates and other informants.

Summary of results: 63% of NOSM graduates have chosen family medicine (predominantly rural) training and 33% are training in other general specialties. The socio-economic impact of NOSM included: new economic activity, more than double the School's budget; enhanced retention and recruitment for the universities and hospitals/health services; and a sense of empowerment amongst community participants which they attribute to NOSM.

Conclusions: There are signs that NOSM is successful in graduating health professionals who have the skills and the desire to practice in rural and remote communities and that the rural distributed community based school is having a largely positive socio-economic impact on Northern Ontario.

Take-home messages: NOSM is a successful socially accountable medical school.

9I/2
Medical education and workforce recruitment for underserved populations

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Tarun Sen Gupta (*James Cook University, School of Medicine and Dentistry, Townsville, Australia*)
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Background: The School of Medicine at James Cook University aims to develop a high quality medical workforce equipped and inclined to practise in underserved areas. As a foundation school of the Towards Health Equity Network, the socially accountable mandate of the medical school has been recognised and the school seeks to engage with external stakeholders to achieve health equity outcomes for underserved populations.

Summary of work: With increased numbers of medical students there is now a unique opportunity to redress longstanding medical workforce shortages in north Queensland, Australia. Research evidence has identified those factors that encourage doctors to pursue a career in rural and remote medicine and to practise in underserved areas. These factors have been incorporated into the medical program.

Summary of results: Strategies employed by JCU to encourage growth of a medical workforce which is responsive to the health needs of regional populations have included: 1.selection processes which favour rural-origin and Indigenous students; 2.curricular emphasis on rural, remote, Indigenous and tropical health; 3.lengthy, frequent clinical exposure in rural and remote areas; and; 4.student support and pastoral care.

Conclusions: The effect of medical education strategies at JCU have impacted graduate outcomes and the medical workforce in a positive way.

Take-home messages: Medical education strategies can positively impact workforce recruitment and retention in underserved areas.

9I/3
Excellence in social accountability: from rhetoric to partial reality

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Background: Social accountability describes the concept in which medical schools/faculties direct their education, research and service activities to meet the health needs of their populations. Bourdieu's concepts of habitus, field and access to resources/capital were used to assess the excellence of social accountability practices in one faculty of medicine.

Summary of work: Faculty literature was studied in advance of a two week period of immersion in the faculty's community by a medical education researcher from another country. During the immersion period, semi-structured interviews with staff, students and health care providers, and observations of practices, took place and further literature was collected.

Summary of results: The literature promoted plans for social accountability. Using Bourdieu's concepts, practical actions were identified in education, research and service activities to support community teaching, needs assessments and care packages. Bourdieu's concepts recognised actions against social accountability to maintain staff-generated activities thus weakening engagement and integration with communities.

Conclusions: The faculty's plans support social accountability but actions can be blocked by the traditional medical hegemony using their access to resources.

Take-home messages: Leaders of social accountability need to use all resources to promote actions that will impact population health needs otherwise social accountability will remain rhetorical.

9I/4
'Getting the pitch right': a study of how medical students can help each other learn the social aspects of medical care

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Background: Medical school graduates worldwide need to understand the broad social context of medical practice.

However courses are frequently seen as 'bolt on' and 'nice' rather than 'need' to know. As an intervention we asked a group of medical students to assist us in the production of a 'social science' resource for their Problem Based Learning curriculum.

Summary of work: Based on a study of this process, our paper reports on semi-structured interviews undertaken with the 12 students involved in creating the resource and the findings of 2 student satisfaction surveys undertaken 'before' and 'after' the resource was produced (n=120).

Summary of results: The students bought 'context' to the project including their own cultural points of reference, experiences of learning and social networks. Moreover the majority of their peers perceived the resource to be relevant.

Conclusions: Changes in medical education have provided opportunities for learning the social aspects of medicine that have remained largely unexplored. Disciplinary integration, the transition from didactic to 'problem based' and 'self-directed' learning and the evolution of multimedia technologies have created new educational landscapes. Student - staff teaching partnerships provide valuable ways of understanding and working within these settings.

Take-home messages: Medical students themselves can help increase overall undergraduate engagement with the social sciences.

9I/5
Do As We Say, Not as We Do": Medical Students' Experiences and Perceptions of Diversity Teaching

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Background: Research examining cultural diversity teaching within undergraduate medical curricula demonstrates the dominance of two models: cultural competency and cultural humility. This paper contributes to the literature by presenting research suggesting that a third model is more appropriate.

Summary of work: 15 semi-structured interviews were conducted with third and fourth year medical students at the University of Southampton. Data was analysed thematically using features of grounded theory and constant comparison.

Summary of results: Participants perceived the curriculum to emphasise a cultural competency model of diversity. More unexpectedly, they also reported receiving mixed messages about diversity because what they were taught often conflicted with what they observed in the clinical setting.

Conclusions: The emphasis on competency rather than humility, and the cognitive dissonance created by differences in what is taught and what is seen in clinical practice, has a significant impact upon students' confidence with patients and colleagues.

A blended model of cultural diversity, which incorporates aspects of both cultural competency and cultural humility models, may help to address the disconnect between what students are told and what they observe.

Take-home messages: A model incorporating the principles of both cultural competency and cultural humility are best suited to practice.

9I/6
How can medical education contribute to advancing Indigenous health?

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Background: Education and training of health professionals has an important role to play in improving Indigenous health and promoting equity. However the design of medical education with respect to Indigenous health has generally lacked explicit consideration of how the curriculum addresses the drivers of inequity.

Summary of work: Using a framework for analysing health inequities as a reference point, we reviewed relevant domains of medical education literature, including professionalism, ethics, cultural competence, social accountability and the hidden curriculum. Based on this analysis, we describe the current capacity of medical education to reduce health inequities between Indigenous and non-Indigenous populations, with a focus on Aotearoa/New Zealand.

Summary of results: Many areas of medical education are ostensibly consistent with approaches to reducing inequity, although they are limited in the extent to which they acknowledge important issues such as colonisation. Aspects of the hidden and informal curricula can be seen to reinforce theories, discourses and practices that serve to maintain inequities.

Conclusions: Realignment of medical education to improve Indigenous health outcomes needs to acknowledge curriculum effects that undermine the positive contributions being made in many areas.

Take-home messages: Medical education can contribute to advancing Indigenous health by taking a systematic approach to curriculum development that explicitly responds to the determinants of inequity.

9I/7
Social Accountability in medical education: where we are in Pakistan

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Background: Social accountability has been defined as the obligation of the medical schools to direct education, research and service activities towards addressing the priority health concerns of the community, region, and/or nation they have a mandate to serve. To ensure a sound accountability is in place, a strong accreditation system, defined as a third party attestation related to a conformity assessment body conveying formal demonstration of its competence to carry out specific conformity assessment tasks, must be in place.

Summary of work: Social accountability, the standards of any accreditation system that judges it, the questions it needs to judge and the ultimate effect of all of this on the medical school system, along with social accountability, is discussed.

Summary of results: Pondered upon in the discussions is where and how, all of this fits into the Medical School System in Pakistan; what and where are the strengths and weaknesses and where should we be directing ourselves to attain our accountability mission.

Conclusions: SA is mandatory in any culture or society if we want to see our Social Health System function with responsibity in the future.

Take-home messages: SA is mandatory in any culture or society if we want to see our Social Health System function with responsibility in the future.

9J Short Communications: International Curriculum

9J/1
International Medical University: An innovative experiment in transnational medical education, 20 years on

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Background: Since its establishment in 1991, the International Medical University (IMU) represents a unique concept in international education. Students entering IMU undertake 2.5 years of study in Malaysia, subsequently transferring to one of 30 international partner schools in 5 countries in 3 continents to complete their training.

Summary of work: A follow-up of 2238 students who have transferred to partner medical schools over a 20 year period was done. An evaluation of partner medical schools, to identify reasons for collaboration and factors that contribute to successful collaborations in international medical education was also undertaken.

Summary of results: 98% of students who transferred to partner medical schools completed, with 87% of students graduating on time. The annual Academic Council meeting enables IMU and partners to quality assure the IMU programme, identify mutually acceptable solutions to issues arising from students transferring to institutions with diverse curricula and pedagogical approaches and offers partners a distinctive networking opportunity.

Conclusions: IMU's approach to curriculum development and quality assurance has important lessons for others engaging in international partnerships. It also shows that students following a core curriculum for 2 years can successfully transfer and adapt to many diverse medical schools.

Take-home messages: This is a pioneering and innovative transnational medical programme that shows how credit transfer can work in medical education.

9J/2
Modernising medical education in Malawi – changes over the last 5 years

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Background: In 2006 Edinburgh University began a long-tem collaboration (Scottish Government funded), with the University of Malawi, College of Medicine (CoM). Then CoM had a very traditional, non-integrated curriculum, delivery methods were didactic and there were frequent knowledge assessments. It had only a few computers, no reliable intranet, no Internet connectivity, and poor textbook/journal provision.

Summary of work: Today, largely as a result of projects led by Edinburgh and St Andrew's, the situation is quite different. The strategy has been to work collaboratively with CoM staff to produce quick gains but to focus on building local capacity and delivering sustainable solutions.

Summary of results: Target enrollments have increased from 20 to ~60 students pa. The medical curriculum has been redesigned, with senior staff gradually assuming more responsibility for defining their own learning outcomes, and basic science and clinical teaching are integrated across all five years. Student-centred learning is supported by digital resources accessible online via a locally-developed, bespoke VLE. Initially ~500 resources were provided by Edinburgh but,

as a result of Edinburgh-led capacity-building and professional development workshops (>100 academic/clinical staff trained), local/collaborative resource creation is gathering pace and modern teaching and assessment methods have been introduced. Increasingly these workshops are Malawian-led. CoM now has circa 100 computers, a greatly improved IT infrastructure ensuring that resources are accessible to students, and trained IT-staff.

Take-home messages: Culturally-sensitive intervention based on collaboration and mutual trust can result in transformation of medical education and service delivery in a developing, resource-poor country.

9J/3
Harvard Medical School Portugal Program – striving for excellence in Medical Education

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Background: In April 2007 the Portuguese Ministry of Science, Technology and Higher Education signed a Memorandum of Understanding with Harvard Medical School (HMS) to develop a program of cooperation in research and education with Portuguese schools of medicine and major national research centers working in biomedical and health sciences.

Summary of work: The Program has three key missions: (1) to improve the quality of medical research and education; (2) to encourage and support collaborative research in biomedical sciences between physicians and scientists in Portugal and at HMS; (3) to produce and publish both medical and health information for the general public and educational material for Portuguese medical students and health professionals.

Summary of results: We sponsored two Symposia in Portugal; organized 8 workshops with approximately 420 participants covering both translational and clinical research topics and ME; selected and provided grant support for 28 people involved in 12 collaborative projects in translational research and health information; supported four Junior and two Senior career development awards and provided summer research grants for five Portuguese medical students at Harvard. Together with Portuguese medical schools and 22 teaching hospitals, we are also creating a public web site with health information for the general public and providing access to advanced CME web-based material from HMS.

Conclusions: The all the reasons stated above, this successful project is what we consider a best practice in medical education, and therefore we aim to share it with other medical faculties.

Take-home messages: Collaborative, transversal and transnational projects between universities are the pathway to excellence in Medical Education.

9J/4
European curriculum recommendations across respiratory specialties: HERMES (Harmonised Education in Respiratory Medicine for European Specialists) initiative of the European Respiratory Society

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Background: HERMES is working towards the development of harmonised and structured programmes for education and training across respiratory specialties ensuring the best quality of care for those with respiratory problems. HERMES projects are developing curriculum recommendations considering educational processes mainly teaching, learning and assessment.

Summary of work: The Paediatric Respiratory Medicine HERMES developed curriculum recommendations in 2010 which provided templates and processes for other projects to follow. A concise, straight-forward and user-friendly training framework was formulated and aimed for target users: policy makers, curriculum developers, trainees, trainers and training centres.

Summary of results: Modules describing learning outcomes, minimum exposure, assessment tools and sample clinical situations within training were defined by acknowledged experts and validated by various national representatives with careful consideration of generalisability and transparency of the process throughout.

Conclusions: Participants were mindful of the challenge of promoting state-of-the-art education while taking into account the differences in acceptability and applicability of the recommendations in different countries. Their rigorous validation and commitment in formulating the curricular content sought to find a balance between making the recommendations both realistic and aspirational as it represents the highest standards of training.

Take-home messages: The transnational nature of the curriculum recommendations highlights and addresses the current trend of mobility among trainees and specialists within Europe.

9J/5
An innovative approach to teaching Global Health

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Background: The Medical School for International Health at the Ben-Gurion University of the Negev, Beersheva, Israel was established in collaboration with the Columbia University Medical Center, NY, USA. The core curriculum of the 4-year program involves the integration of Global Health and Medicine into all aspects of medical training. In this context, we recently developed an interactive clinical week of workshops to provide students with the knowledge and skills for facing the challenges of Global Health.

Summary of work: An intensive global health week based on practical clinical workshops was designed with the active participation of students. Interactive teaching methods included the use of simulated patients, case discussions, student presentations from relevant literature, small group sessions with expert tutors, and problem-solving exercises based on low-resource settings. The workshops focused mainly on pediatric and women's health, and on cross-cultural issues.

Summary of results: Questionnaires completed by students prior to and following the program revealed a significant increase in knowledge, improvement of communication skills and an increase in student awareness of culturally significant Global Health topics.

Conclusions: Preparing medical students for providing care in culturally diverse developing countries with limited resources is challenging. We believe that our teaching model provides an innovative approach to this challenge.

Take-home messages: We share our successful experience to approach the teaching Global Health issues.

9J/6
What is taught on the Global Health syllabus in medical schools in the UK and overseas?

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Background: Global Health education is now established within the medical undergraduate curriculum. Overseas fellowships and humanitarian work have globalised medical practice and education. Worldwide, medical schools have developed individual Global Health education programmes.

Summary of work: We contacted medical schools which advertise Global Health taught courses and asked how they deliver their courses and choose what subjects to cover from lectures on cervical cancer in the developing world to workshops on the protection of human rights.

Summary of results: We present courses from medical schools on five continents which deliver common teaching on HIV/AIDS and widely differing courses covering global finance, the SPHERE standards and workshops on oxygen concentrators. We rationalize a standard Global Health curriculum that incorporates local public health priorities, resources and learning environments.

Conclusions: Global Health teaching across the world is not uniform. Teaching is dependent on local expertise and experience, demographic and cultural mix and emphasis on classroom teaching versus practical experience for students in internships with non-governmental organisations and clinical clerkships.

Take-home messages: Perhaps a global Global Health syllabus can/should never be designed; but there are common principles that most medical schools agree should be taught, and opportunities to learn from each other in how we make the most of local and overseas learning opportunities.

9J/7
The use of a reflective model and computer mediated communication to promote cultural competence in student nurses

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Background: Multiculturalism is a major characteristic of modern societies, which has significant implications for health care delivery and health care systems. However, the indications are that many recipient countries fail to provide culturally competent care to immigrant populations resulting in some immigrant groups reporting dissatisfaction with health care provision.

Summary of work: This paper describes how a cultural model of reflection was designed in order to facilitate the exploration of cultural health care values within a pre-registration nursing curriculum. The model was used in conjunction with computer mediated communication (CMC), which provided visual and auditory trigger material to provide an authentic learning experience. The nature of the trigger material was specially chosen to stimulate and bring to the surface students strongly held attitudes and beliefs so that they could be explored and challenged within a safe learning environment.

Summary of results: Formal evaluation of the approach identified that Students found the approach challenged their assumptions of cultural health beliefs and made them much more aware of differing cultural health needs.

Conclusions: The combination of the reflective model and CMC has proven to be an effective in helping to develop cultural competence in nursing students.

Take-home messages: Cultural competence can be enhanced with the use of reflection and visual learning material.

9K Short Communications: Evaluating the Teacher

9K/1
Faculty Selection Using OSTE

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Background: All faculty selection process at the nursing institutes in Oman are interview based, with bias and personal preference being the major factors to chose the faculty plus their GPA at undergraduate level. A new process was needed in order to choose faculty for the new nursing school at the Ministry of Health, and therefore OSTE has been introduced. Many staff development workshops were run to understand, implement and conduct the OSTE (12 members from different institutes were involved).
Summary of work: 5 OSTE stations were set up looking at different characteristics needed to have in any staff faculty chosen.
Those related to mentoring, showing practical skills, giving feedback to students, lecturing skills and an interview station. Specially trained students (simulated students) will be used in these stations.
Summary of results: OSTE will be run in May of this year with details of results to be discussed at AMEE 2012.
Conclusions: OSTE can be a highly successful method used in faculty selection as it reduces the bias and the personal preference criteria and looks in depth into true characteristics of a good teacher (faculty).
Take-home messages: More OSTEs should be used when choosing teachers or faculty.

9K/2
Beyond students' rating scales: reactions of teachers to peer evaluation of their performance

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Background: Student ratings of teachers are the more frequent and accepted assessment method of their performance. However, the educational theory has proved that it needs to be complemented with other assessment methods, and observation of their actual teaching activities is one of them.
Summary of work: The aim of this work was to try to understand how faculty members conceive and react to the observation of their teaching by their peers or educators. We conducted semi-structured interviews to 30 faculty members and asked them about their reaction to the teachers assessment system and their conception of it.
Summary of results: Teachers accepted and welcomed being observed and seldom felt the observation was intrusive, but that it was useful, and improved their teaching. They considered the observation as an effective way to improve their efficacy. They requested feedback on their teaching performance as an essential component of the observation, which was seldom given. Grading is mentioned as a predominant difficulty, and prefer to be observed by an educator and not a by peer physician. After the initial resistance to the observer they accepted their presence and comments.
Conclusions: Teachers accept being assessed, but they need effective feedback, and institutionalization of this procedure.

9K/3
Teachers' reactions on feedback from residents' evaluations in day release training

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Background: Teacher evaluation in the day release training is common practice, but the reactions of teachers who are working with the resident groups on evaluations and feedback is rather unexplored. From literature it is known that learners' response to feedback strongly determine the effectiveness of feedback3. We were interested in how the day release teachers reacted to feedback reports, gained from residents' evaluations. Our aim was to identify keys for effective feedback.
Summary of work: We carried out this study in the post graduate day release programmes for family medicine in the Netherlands. Feedback was gained from evaluations of resident groups who are related to their teachers for a longer

period of time. Results were presented in individual reports (N=54). We discussed the reports in individual semi structured interviews.

Summary of results: Teachers reacted curiously, but at a distance. The most frequent coping strategy was to redirect the standards to their own beliefs, especially concerning scientific standards.

Conclusions: Teaching was viewed as a personal activity and teachers wanted to discuss personal standards with peers rather than comparing these to external standards.

Take-home messages: The study gives insight in the way teachers experience and appreciate residents' evaluations and reveals some keys that could lead to the desired effect of feedback, which is professional improvement.

9K/4
Evaluating the quality of postgraduate medical education: Results from a multicenter cross sectional study

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Background: Insight in the quality of teaching is indispensable for effective teaching. We developed the EFFECT questionnaire for evaluating supervisors in postgraduate medical education. Earlier studies showed measurement properties of this instrument are good. In this study we elaborate on research questions concerning the effect of the eleven teaching domains of EFFECT, and background characteristics of residents and supervisors on the overall ratings.

Summary of work: Cross-sectional questionnaire survey amongst 15 disciplines in 4 hospitals (2010-2011) Statistical analyses include multivariate regression analyses and logistic regression models.

Summary of results: We received 1157 questionnaires about 241 supervisors and 161 self-evaluations. Residents rated overall quality of clinical teaching as satisfactionary. Ratings were not influenced by discipline and residency year. We will present which teaching domains mostly influence overall ratings; differences between academic/non-academic hospitals; differences between female/male supervisors, and answer the question whether female residents are better of with male or female supervisors. Furthermore, the validity of self-evaluation of supervisors is discussed.

Conclusions: Quality of clinical teaching does not differ per discipline and residency year. Eleven teaching domains are

defined of good clinical teaching, the influence on overall scores will be presented.

Take-home messages: Evaluating supervisors by residents is feasible and gives insight in what residents value in good clinical teaching.

9K/5
A Study on the Characteristics of Excellent Professors in Medical College for the Activation of Medical Education

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Background: Students' study results are influenced by the educational goals and curriculums of college in the big picture. However, they are under the immediate influence of teaching abilities and lecturing methods of professors.

Summary of work: The study presents the analysis results of needs of students, the subject of education, regarding the capabilities of excellent professors in medical college. A group of students were surveyed on professor's capabilities they would value most and their favorite courses and the highly rated professors were personally interviewed about their competence and lecturing methods.

Summary of results: The students placed the greatest importance on the ability to exactly identify the student's level of learning and to teach them to fit their learning levels and needs rather than the professors' expertise or research accomplishments.

Conclusions: In medical education, most of the previous studies have dealt with overall curriculums and evaluation rather than professors' teaching abilities and methods. This study, however, paid attention to the fact that the differentiated educational methods even for the same knowledge affect students' satisfaction with lectures and thus their learning results.

Take-home messages: There should be teacher education programs and related subjects so that they can provide learner-centric "student-level education" by accurately analyzing their needs instead of teacher-centric knowledge delivery.

9K/6
Self-assessment of clinical teachers in comparison to evaluation by students

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Background: Educational psychologists claim that self-assessment is important for lifelong learning, especially for complex skills like clinical teaching [1,2]. This competence might improve with increasing teaching experience, but also it could be related to teaching quality.

Summary of work: We assessed clinical teachers after 50 min lessons, delivered to 5-6 students. At the end of the session teachers evaluated themselves by a teaching quality questionnaire and were also evaluated by their students by a questionnaire covering the same fields of competencies. Teachers' experience was classified as: 'novice' (0-1 year), 'intermediate' (2-7 years), and 'experienced' (> 8 years). Referring to teaching quality, teachers were divided into quartiles according to the results from students' evaluation questionnaire.

Summary of results: 75 lessons were evaluated, 43 clinical teachers participated, 409 students evaluated them. 15 teachers were 'novices', 21 'intermediates', and 7 'experienced'. The concordance between self-assessment and evaluation by students was generally high, revealing no differences between experience levels. However, evaluation by students showed higher ratings for the less experienced teachers in all 8 studied categories.

Conclusions: The ability for consistent self-assessment of clinical teachers is generally high. The competence is not associated with years of teaching experience but rather with teaching quality as assessed by students.

9L Short Communications: Simulation 2

9L/1
Skills Labs in Central Europe - Current Status, Challenges and Future Prospects

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Background: The implementation of clinical skills labs in Europe is rising and practical medical education is the focus of curriculum reform in many countries. However, the current situation of the existing labs, their resources, expansion plans or problems have not been researched in detail.

Summary of work: All 46 German-speaking medical schools in Austria, Germany and Switzerland were sent comprehensive questionnaires. Questions ranging from resources to personnel, clinical specialties, education research, leadership, mandatory/voluntary training, OSCE-involvement and postgraduate education were asked.

Summary of results: 93% (40) questionnaires were returned. 36 Universities (90% of replies) have already established a skills lab, 2 are planned. In 2007-2009 alone 17 new labs were founded. Only 1 lab has not been expanded in the last 5 years, only 3 don't plan to expand in the next 5 years. 35 labs use student tutors.

Conclusions: A clear trend of increasing simulations centers can be shown. There is massive expansion of existing centers.

However, differences in financial and other resources can be seen, also the offered skills differ greatly. Peer teaching is widely used. Most centers describe lacking funds being an issue.

Take-home messages: Universities are recognizing the existing trend in "hands-on"-education and peer teaching. Resources and offered skills vary greatly, increased cooperation may be useful.

9L/2
An impact assessment model for simulation based learning. The Simbase Impact Assessment Model proposal

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Background: Simulation has become an extremely useful tool for policymakers in the field of healthcare education. The Impact Assessment Model (IAM) is the main results of SIMASE project.

Summary of work: Aim: to develop an Impact Assessment Model made up of indicators of effectiveness and contribution to the priorities of public health system. Method: The IAM has been developed adapting The PRIME®'s pyramid model (learning model), and the PROCESS MODEL OF ISO/IEC 19796 – 1 (the appropriate process). The model has been designed from three perspectives: students, teachers and the organization. It takes into account the elements (of success or failure) that these players can enter at all stages in the training by simulation (before, during and after). This model is being implemented in four European countries (Hungary, Portugal, Spain, and United Kingdom) through a piloting-guide.

Summary of results: It has obtained a common final impact assessment model for simulation based learning and training in healthcare sector, with the potential to be adaptable and implemented in various contexts.

Conclusions: To implement the ICT Based Simulation enhanced learning in healthcare with high levels of quality and effectiveness it is necessary to develop and implement an Impact Assessment Model. This model is a useful tool for policymakers and will be implemented in different contexts.

Take-home messages: To measure the impact of simulation based learning is an important tool to measure the effectiveness and contribution to public priorities to healthcare system in Andalucía and other European countries.

9L/3
Bone marrow puncture simulator-based learning in the clinical clerkship

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Background: Bone marrow puncture and aspiration is an invasive procedure and is difficult to learn in the undergraduate clinical clerkship. Beginners are recommended to perform bone marrow puncture at iliac crests not at sternum in Japan.
Summary of work: We developed an iliac crest-type bone marrow puncture simulator. Fifth-year students joined the clinical clerkship at the haematology Ward were being trained using the bone marrow puncture simulator. Forty-nine students were enrolled in the study
Summary of results: Before training, 6(12%) students answered iliac crest to be punctured. After training, 44(90%) answered correctly. Fourteen(28%) and 34(71%) of students evaluated the training excellent and good, respectively. One said "I learned the bone marrow puncture using real needle and manikin. I never forget the process."
Conclusions: Bone marrow puncture simulation-based learning is effective for medical students. To decrease the burden of postgraduate training, we would like to stress the usefulness of bone marrow puncture simulation-based learning in the undergraduate clinical clerkship.
Take-home messages: We would like to spread bone marrow puncture simulation-based learning in the clinical clerkship of the world medical schools because of its usefulness and, at the same time, inexpensiveness.

9L/4
The evaluation for the self-learning software for a heart sound simulator

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Background: Simulator K helps to learn heart sounds but learners do not know how accurate they understand the timings of heart sounds. Software was created to learn the timing of normal and extra heart sounds. The most useful feature is the self-assessment module, in which students click the computer mouse to follow the same timing and get feedback just after that. We evaluated the self-learning software for a heart sound simulator for 4th-year medical students to understand the timing better.
Summary of work: Eighty eight students used the software in a 90-minute practical class for clinical skill training. Learning modules include texts, tables, pictures, and movies. They could decide how much time they spend for learning and assessment within the time frame. They tried at most five times of assessment until they pass the self-assessment. Before and after this learning session, they responded the evaluation sheet.
Summary of results: Self-assessment changes before and after the session showed significant improvement for S3 and OS (effect sizes of 1.42, 0.92, and 2.44). Self-assessment of own normal respiratory splitting of S2 was also dramatically improved (effect size of 1.09). In open comments, 48 students included difficulty to succeed in assessment but 33 mentioned the software made easy to understand heart sounds.
Conclusions: This software has improved the self-assessment of understanding of normal and extra heart sounds. More improvement is needed to decrease the sense of difficulty when they assess their understanding.
Take-home messages: Clicking computer mouse might be a useful way for self-assessment of heart sound timing.

9L/5
Learning style of simulation participants and their perception of the phases of simulation

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Background: Our hypothesis is that "accommodating" students, who prefer learning through doing and experiencing, should find taking part in a scenario most useful and "assimilating" learners, who prefer thinking and reflecting, should perceive more benefit from the observation and debriefing phases.
Summary of work: We administered Kolb's Learning Styles Inventory to 35 simulation participants (medical students and junior anaesthetists) with a questionnaire regarding enjoyment, usefulness for their professional and personal development and how challenging they found each phase.
Summary of results: Regardless of learning style, the majority of participants enjoyed most taking part in the scenario and found participating in the scenario most challenging (90%). 88% of those with a preferentially "accommodating" style vs. 54% of those with a preferentially "assimilating" style found taking part in the scenario most useful for their professional development (p=0.04).
Conclusions: Perception of usefulness of the different phases of the encounter varied according to learning style, but a

considerable proportion of reflective learners found scenario practice most useful for their development.

Take-home messages: Perhaps there is a student bias towards considering taking part in the scenario as the most useful part of the learning process. If so, it might be beneficial to educate participants in how best to make use of this learning opportunity.

9L/6
Validation of Distributed Simulation in Urology

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Background: Surgical simulation training in de-contextualised environments such as the classroom divorces technical skills from teamwork and communication, which are key to effective clinical practice. Simulated operating rooms offer an environment where both technical and non-technical skills can be developed; however, they are expensive to develop and maintain.

Summary of work: We used a transurethral resection of prostate (TURP) bench-top model, a scrub-nurse and an anaesthetist in the Distributed Simulation (DS) environment to create a simulated operating theatre in which trainees can learn to perform a TURP and simultaneously develop non-technical skills. Ten expert and ten novice urologists performed a TURP; participants' feedback and performance data were analysed.

Summary of results: All 20 participants reported that the environment was realistic, immersive and better for teaching both technical and non-technical skills than the classroom environment. Provisional results indicate that experts outperformed novices in technical and non-technical skills, thus establishing construct validity. Additional data, establishing educational impact, is currently being analysed.

Conclusions: DS-based urology training provides a realistic environment for TURP simulation and offers an opportunity to extend part-task urology training into an environment in which technical and non-technical skills can be developed.

Take-home messages: DS based urology training has the potential to offer cost-effective immersive simulation training in urology.

9L/7
Simulated Donor Family Encounters at Organ Transplantation Coordinators in Service Training Course: Process and Impact Evaluation

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Background: Based on OTCs' task analysis and national syllabus we have developed and implemented Simulated Donor Family Encounters (SDFE) enhanced National Course at Ege University.

Summary of work: The organizational, ethical, medical, communication topics were covered by explanatory, interactive sessions and SDFEs. The four-day course in general and SDFEs specifically were evaluated by participants' feedbacks by a 1-9 Likert type items and ten points rating scale. Participants' learning level was assessed by a 30 item MCQ post-test and instructors' SDFE observation ratings. Participants were asked to write a letter explaining "what they will realize in one year" then self objectives were grouped to four main themes and 10 working area by thematic content analysis. One-year later, for evaluating behavioral change, the participants were asked "what they have realized" by a phone survey.

Summary of results: All thirty participants were strongly agreed that the course was high quality (X=8.6±1.0) and SDFEs' were instructive (X=9,1±1.0) in 10 points rating scales. Post-test scores were (X=96.0±3.8) out-of a max. 100. SDFEs instructor ratings on "regarding/tolerating skills to the families' point of view" were highest among 14 observed skills. Phone surveys showed that most of the objectives were realized.

Conclusions: The course was well received, the content learned well and learning used in practice.

Take-home messages: Simulated practice-based training is usable for high quality and effective in service training programs for OCTs.

9M Short Communications: eLearning: Educational Resources

9M/1
Introducing ethical and professional guidance on making and using recordings of people in learning and teaching

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Background: There is an international impetus to share educational materials as Open Educational Resources (OER). Acknowledging the rights of people appearing in teaching resources is an important ethical consideration. Attributing consent in such materials is difficult in open licensing schemes like Creative Commons. A bewildering variety of guidance exists on using recordings of people in education, written from several professional standpoints (GMC, IMI etc), set against a complicated legal landscape.
Summary of work: A Task Force was formed to oversee producing a single guidance tool. Four principles were developed, which underpin this guidance. These cover consent to make/use recordings of patients/other people, ensuring ownership and licensing are respected and professional responsibilities for the storage, use and sharing of those recordings are observed.
Summary of results: The guidance (http://www.jiscdigitalmedia.ac.uk/clinical-recordings): • Helps with ethical and considerate behaviour. • Introduces special issues which arise with recordings made in clinical settings. • Provides practical guidance making/using clinical recordings for teaching. • Helps with understanding associated obligations which arise.
Conclusions: Instilling principles of ethical mindfulness at every stage of the creation and use of recordings with people in educational resources is important.
Take-home messages: There is more work to do expanding the results of the task force's work if principles of openness are to be embraced fully in medical education.

9M/2
Building e-learning modules with free Web 2.0 services

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Background: E-learning is part of the mainstream in medical education and often provides the most efficient and effective means engaging learners in a particular topic. Translating design and content ideas into a useable product can be challenging, especially when Learning Management Systems and IT support are not available.
Summary of work: GP Synergy Limited, a regional training provider delivering the Australian General Practice Training program, developed and built an online evidence-based medicine and critical appraisal course for GP registrars. We used and integrated a number of free web 2.0 services including: Prezi, a web-based presentation platform;

YouTube, a video sharing service; Google Docs, a online document platform; Tiny.cc, a URL shortening service; and Wordpress, a blogging platform.
Summary of results: The e-learning course; consisting of five multimedia-rich, tutorial-like modules; was built without IT specialist assistance. No specialised software or computing knowledge was required. The web 2.0 services used were free. Learners can access the course anywhere with a modern web browser.
Conclusions: Modern web 2.0 services remove many of the technical barriers to creating and sharing content on the internet. They were a pragmatic solution for our project.
Take-home messages: When used synergistically, web 2.0 services can be a flexible and low cost platform to building e-learning activities.

9M/3
Labyrinth extensions for OOER – a toolkit for managing workflow in organising open educational resources

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Background: The UK Higher Education Academy Subject Centre for Medicine, Dentistry and Veterinary Medicine (MEDEV) steered five projects with HEFCE funding administered by JISC and HEA, from 2009 –12,. Organising Open Educational Resources (OOER) was a multi-institutional initiative to develop a framework towards sharing open educational resources (OER).
Summary of work: One key deliverable in risk managing each resource was the development of a set of toolkits which offered a step by step process assisting individuals in uploading a local educational resource to a nationally shared repository. In a subsequent project, Pathways to Open Resource Sharing through Convergence in Healthcare Education (PORSCHE), these were amalgamated into a single instrument: 'risk-kit'.
Summary of results: The workflow for resource upload comprised multiple, branching decision points with mutual start and end points common to each toolkit. This presentation explores how Labyrinth – a case sequencing tool developed by the University of Edinburgh's Learning Technology Section frequently associated with game-informed virtual patient cases – was customised with a suite of extensions to develop and enhance its potential as a workflow management tool. It will describe the various extensions, including bookmarking, comment capture,

pathway visualisation and XML transfer to third party sites, and will also report on international user testing of the integrated risk-kit.

Take-home messages: A branching case authoring tool can, with appropriate extensions, assist academics in the workflow and risk management of releasing and cataloguing open educational resources.

9M/4
An online repository facilitates radiology residency training and evaluation of education theory

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Background: A key question in planning the organisation of an online repository is what to include in the repository, and to what purpose.

Summary of work: An online repository of radiology cases has been developed over the last 12 months focusing on the Chest Radiograph and CT scans of the brain. This was used to test the hypothesis that deliberate practice with case pairs is more effective and time efficient for residency training compared with traditional sequential case review using an independent groups quantitative experimental design with crossover with 10 radiology residents, random allocation of 5 residents to either experimental or control group for CXR and crossover for CT brain.

Summary of results: The online repository facilitated the presentation of 30 cases for both CXR and CT brain covering the imaging spectrum of one key clinical diagnosis each. The results comparing performance for 20 cases (10 pretest and 10 posttest) support the research hypothesis with the experimental group showing a persistent trend with better scores, and taking significantly less time compared with the control group (t(78) = 2.30, p = .02).

Conclusions: A purpose built online repository facilitates radiology residency training, and evaluation of education theory applied to residency education.

Take-home messages: A purpose built online repository facilitates radiology residency training, and evaluation of education theory applied to residency education.

9M/5
Symptomia – A Fast Diagnostic Symptom Checker

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Background: The initiative of preparing this diagnostic tool was triggered by the need to have quick access to medical information based on the most common symptoms. Symptomia is meant as a quick reference tool in the first place for medical students and young doctors as well as for all healthcare professionals, and also for all others who seek information about various symptoms.

Summary of work: At the bedside, medical students or doctors when facing symptoms may need quick access to more information about possible diagnosis and disease description within reach. Upon entry, the application displays a list of 22 most common symptoms on an iPhone or iPod touch. In only 1 tap one can go from observed symptoms to the list of different diagnostic possibilities and then to the description of disease or disorder. A second tap leads to the medical information on causes of these symptoms. Special emphasis, as name of the application suggests, is attached to the symptoms characteristic for a given disease or disorder. The description of etiology, symptoms, treatment outlines, prognosis as well as prevention advice are based on the most modern medical textbooks and the author's clinical experience. The description of disease or disorders is quite detailed but on other hand understandable to other interested people. Intentionally, the information lacks details about treatment, indicating only its directions.

Conclusions: Symptomia is a medical reference app with a very fast symptomatic interface. It enables the students and healthcare professional quick access to an expanded up-to-date medical reference database. The application, which is available on the iTunes App store, allows quick access to medical information in just 2 taps on the screen of iPhone or iPod touch.

9M/6
A quantitative analysis of Youtube as a resource for surgical education

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Background: Youtube is the 3rd most visited website. We quantified the availability of Youtube videos for each surgical specialty PBA.

Summary of work: A list of the PBAs for all 9 surgical subspecialties was extracted from www.iscp.ac.uk. Search terms were derived from the PBA titles for each procedure excluding potentially nebulous terms. Youtube searches were conducted using the derived terms and the number of video results was recorded and analysed.

Summary of results: 92.6% of PBAs were available online. Specialties were ranked according to videos/procedure. The top ranked subspecialty was OMF Surgery (875.5 videos/procedure), the lowest total number and the highest number of procedures with zero videos was Urology (35.6 videos/procedure; 8/53). The breadth of General Surgery included overlap with other specialties and may have affected their ranking. The T&O curriculum is completely covered (20853 videos, 100% PBAs).

Conclusions: There is a wealth of surgically based educational videos on Youtube. These videos represent a new, valuable and potentially underused learning resource.

Take-home messages: Videos can aid teaching of surgical technique and we would encourage sharing of good techniques.
The relative lack of material in certain specialties provides an opportunity for surgeons to expand their teaching portfolio via video production.

9N Workshop: How ready for curriculum change is your medical school? A practical tool to improve the chance of successfully implementing changes in your school

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Background: In the whole world many medical schools are changing their curriculum but it is still unclear which factors promote successful change. Earlier research found that 'organizational readiness for change' (ORC) is a critical precursor to successful implementation of change. We developed and validated an instrument to measure a Medical School's Organisational Readiness for Curriculum change (MORC).
Intended outcomes: Practical information how you could assess the readiness for change in your medical school. Practical advice on how you could use the outcomes of an analysis with MORC to increase the chance of successful change implementation in your school.
Structure: Introduction on the concept of ORC. Next, individual completion of the MORC instrument and determination of areas which have highest priority for improvement. Afterwards, discussion in groups of four from which minimally one person is from a medical school currently in a change process. Within the small groups we will try to develop strategies with which the areas of highest priority can be improved. Finally, the small groups will present their areas of highest priority and their developed strategies to the whole group.
Who Should Attend: Staff or management members of medical schools that are preparing or implementing a curriculum change. All other interested persons in curriculum change are welcome.
Level of workshop: Intermediate.

9O Workshop: Challenges, enablers, and opportunities of running a community-engaged longitudinal clerkship

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Background: The longitudinal clerkship is considered an alternative to the traditional specialty rotation model and places learners at a single community-based clinical location for an extended period of time where the specialties are integrated within the context of broader population health issues. The MD program at the Northern Ontario School of Medicine (NOSM), the first new school in Canada for more than 30 years, dedicates the entire third year of its four-year program to a single longitudinal clerkship in thirteen northern communities.
Intended outcomes: Participants will be introduced to the concepts of the longitudinal clerkship model and will explore the ways in which a longitudinal community-based experience can more than equal the opportunities afforded by more traditional clerkship models.
Structure: Participants will design a longitudinal clerkship model to suit their own circumstances. Designs will be critiqued by the group and related to principles for context specific longitudinal clerkship models. The workshop will conclude with an exploration of collaborative opportunities for further developments.
Who Should Attend: Interested faculty, educators, curriculum developers and learners in implementing a full or hybrid of longitudinal community-based clerkship experiences.
Level of workshop: Intermediate.

9P Workshop: Continuing Medical Education: Obtaining and Measuring CME Course Outcomes

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Background: Systematic reviews of the literature demonstrate that short CME courses can result in changes to physician knowledge, skills, attitudes, and, if they are well designed, to physician behavior and potentially, patient and community outcomes. Specifically, CME activities which

include interactive components, multiple exposures, and require less complex behavioral changes appear to have the greatest likelihood of success. This workshop will explore the critical design elements needed for good outcomes and discuss approaches used to evaluate educational outcomes.
Intended outcomes: Following the workshop, participants will be able to (1) describe the CME outcome literature as synthesized from systematic reviews, (2) identify approaches for determining the impact of a CME intervention or activity, (3) discuss their approaches to CME curriculum design and outcome measurement, (4) identify 2-3 techniques they plan to adopt to enhance their work.
Structure: Following a brief presentation of literature related to effective CME l programs, participants will discuss the critical design features to promote physician change and how they design programs to maximize outcomes. Approaches for measuring outcomes (e.g., commitment to change, physician self-report,) will be described and participants will discuss their own approaches. Participants will complete a commitment to change questionnaire to identify the changes that they plan to implement.
Who Should Attend: CME providers, designers and evaluators.
Level of workshop: Intermediate.

9Q Workshop: Electives – how to help them become engaging, collaborative, sustainable, mutually supportive and of productive outcome

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Derek Resario, University of Sheffield, Academic Unit of Medical Education, Sheffield, United Kingdom

Background: Electives are undertaken with high principles and a passion for helping make a difference. Knowing where to start is difficult - there are 11.7 million internet sites about electives. Sadly, not all electives match student expectations. Opportunities for collaborative working and learning are considerable but occur infrequently. Electives typically occur over a few weeks each year and such an arrangement prevents sustained engagement between partner organisations and their students.
Intended outcomes: Start to create a global electives register; to determine good practice as regards student elective exchanges across the world and help students to work collaboratively and for a common purpose.
Structure: This workshop will facilitate a dialogue on the purpose and benefits of electives and enable participants to start to develop a register of 'exchange sites'. The discussion would include:• Is there a wish to establish a register of quality elective placements where students from different countries would work multi-professionally and with local students?• How might reciprocity be established so that student travel and engagement is not unidirectional?• How

might students undertaking electives contribute to the benefit of their hosts?
Who Should Attend: Those involved in the organisation and development of elective programmes.
Level of workshop: Intermediate.

9R Workshop: Understanding Wicked Problems

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Background: Some problems are so complex that you have to be highly intelligent and well informed just to be undecided about them." --Laurence J. Peter In 1973, Horst Rittel and Melvin Webber first identified a type of problem that failed to respond to traditional approaches to problem solving. These "wicked problems" are issues that force us to reframe our notions about problems and solutions, including our expectations for strategic and long term planning. Participants will be introduced "wicked problems" as they exist in health care and education systems. Drawing on complexity theory, this concept challenges traditional approaches to problem-solving by exploring the nature of these complex problems. Notably wicked problems are viewed in the context of potential solutions.
Intended outcomes: This interactive workshop addresses strategies for coping with these complex issues. Participants will leave the workshop with new perspectives on leadership, problem formulation and resolution. Participants will be able to recognize and describe defining characteristics of "wicked problems" as well as strategies for coping with varying degrees of "wickedness".
Structure: Following a brief introduction, this interactive workshop will guide participants through a series of interactive exercises designed to increase awareness of the complexity and potential approach to wicked problems.
Who Should Attend: Anyone interested in problem solving, strategic planning and leadership
Level of workshop: Intermediate.

9S Workshop: Complexity in Medical Education: Practical Tools for Teachers

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Background: Over the last few years, a small group of interested medical educators have tried to approach the notion of 'complexity' in medical education from a practical perspective. At recent AMEE Conferences we have offered workshops on complexity as it relates to leadership, teaching and sociological models, but this workshop is more practical, and addresses the application of 'complexity' to defined methods one can use in the classroom.

Intended outcomes: By the end of the workshop participants will have:• Considered how the work of medical educators and their organisations can be understood utilising the notion of complexity as a 'practical theory' using the Cognitive Edge © model;• Be conversant with at least two useful tools, based on the Cognitive Edge methods and theory, which can then be used in practical ways back in the classroom; • Appreciate the contextual relevance of the various tools, and the common successes and pitfalls associated with their use in educational practice.

Structure: Participants will be introduced to a small number of useful and practicable methods related to Cognitive Edge © methodology, learn about their contextual application, and have the opportunity to experiment with their use.

Who Should Attend: Any medical educator interested in learning how to use complexity-related tools in practice.

Level of workshop: Beginner.

9T Workshop: An introduction to mentoring using the Egan Skilled Helper model

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Background: The Egan Skilled Helper model uses a structured conversation to help mentees move towards recognising their own problems and then developing strategies for moving towards solving them. It is a three-stage model, centred on empowering the mentee to enable them to identify, delineate and better define issues so as to see how to move forward with them. It aims to help people 'manage their problems in living more effectively and develop unused opportunities more fully', and to 'help people become better at helping themselves in their everyday lives.' (Egan 1998: p7-8). The model seeks to move the mentee towards action leading to outcomes which they choose and value. The Egan approach is used very successfully in supporting psychiatrists, physicians and surgeons in the East Midlands, UK.

Intended outcomes: To discuss coaching and mentoring as helping relationships To introduce the Skilled Helper Mentoring model To identify right and wrong ways of mentoring To be able to use the Egan approach to support mentees with issues.

Structure: Large and small group discussion of mentoring and coaching; Video samples of mentoring; Discussion and evaluation of video samples; Asking the right questions; Discussion of advantages and disadvantages of the Egan approach.

Who Should Attend: All healthcare professionals and medical educators.

Level of workshop: Beginner.

9U Workshop: Using classical test theory to evaluate and improve assessment: An introduction

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Background: Although there are more modern psychometric theories, classical test theory (CTT) provides the simplest approach to analysing the performance of assessments. CTT provides analyses of item performance such as item facility and item discrimination. Both are useful in deciding which items to revise after a test, or to select from a question bank. In CTT Cronbach's α is used to measure assessment reliability, or the reproducibility of scores.

Intended outcomes: Those attending this workshop will be able to:• Apply CTT concepts to the calculation and interpretation of item statistics.• Define 'reliability' in CTT terms; explain the calculation of Cronbach's α; describe the factors in test design that influence reliability.• Interpret values of Cronbach's α generated by single best answer (SBA) and OSCE assessments and consider how deletion of items or stations may improve the balance between content validity and overall reliability.

Structure: Delegates will use case studies from SBA and OSCE assessments to gain experience of the practical application of CTT. The workshop will not involve calculations, although some useful Excel workbooks will be provided.

Who Should Attend: Anyone with assessment responsibilities wanting to know more about evaluation of assessments. No prior knowledge of psychometrics is required and mathematical concepts will be kept to a minimum.

Level of workshop: Beginner.

9W Posters: eLearning Case Studies 2

9W/1
Medical Qualification Online (Quomed) – Evaluation of an innovative and interactive online continuing education programme for general practitioners

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Julia Eberle *(Ludwig-Maximilians-Universität München, Munich, Germany)*
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Background: Over two years, a modular distance-learning-CME-programme with 24 modules that cover different aspects of internal and general-medicine has been developed. A collaboration script was implemented to scaffold collaborative case-based-learning. The collaboration script specified an individual learning-phase with clinical cases and video-interviews with experts and a collaborative learning-phase in which participants work together on specific cases.

Summary of work: In our study we evaluated the QUOMED-CME-module "preoperative-risk-assessment". 66 third- and fifth-year-medical-students participated. We used a pre-post-design to evaluate subjective (self-assesed) and objective increase of knowledge. Knowledge test consisted of 15 multiple-choice-questions (1-out-of-5) and self-reported confidence of knowing the correct answer for each question on 4-point Likert-scale (1=very uncertain to 4=very certain).

Summary of results: Number of correct answers increased significantly ($t(65)=-28.03$; $p<.01$) from M=5.06 (SD=1.96) in pre-test to M=12.58 (SD=1.91) in post-test. Self-reported confidence of knowing the correct answer increased significantly ($t(65)=-4,79$, $p<.01$) from M=2.58 (SD=1.68) in pre-test to M=3.80 (SD=1.09) in post-test.

Conclusions: The results can be regarded as evidence that collaborative learning supported by a collaboration script can support the increase of subjective and objective knowledge in case-based-distance-learning-courses. Further studies including pre-post-experiments with a control group will investigate the effects of collaboration more systematically and test the extent of generalizability to other groups-of-learners, including general practitioners.

9W/2
Software in education: merging medicine with technology

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Background: Increasing demand for the interconnection between medicine and software solutions is the main motivation for involving education focused on programming skills.

Summary of work: This article describes medical data processing, incorporation with HIS (Hospital Information System) and the National Pacemaker Registry created as an educational support for students of biomedical engineering at VSB-Technical University of Ostrava.

Summary of results: Students are introduced to tasks with real time data capturing and processing from the vital signs monitor (DASH or EAGLE) to ImplantSys application implementing communication protocol for data transfer. Students are able to measure, process and evaluate data sets from ECG, pulse oxymetry, blood pressure, etc... Also they are able to test and understand themselves the process of data collection with different types of electrodes and sensors, data transfer via Ethernet based TCP/IP communication protocol, and processing with the final evaluation of results into the National Pacemaker Registry.

Conclusions: Understanding the whole process from the data source collection method to data evaluation and storage together with the processing of real bio-signals and learning about cardio-physiology and cardio-anatomy are the main benefits for students.

Take-home messages: Improve the motivation and programming skills of students by showing them real examples of what they can achieve.

9W/3
Augmented Experience Modules. A technological innovation for clinical learning

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Fiona Foley (*Monash University, Central Clinical School, Melbourne, Australia*)
Marcus Leonard (*Monash University, elearning Services, Clayton, Australia*)

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Background: Interaction with real patients provides critical learning opportunities for medical students. However, it is difficult to predict when students will have a specific patient experience (in terms of a clinical disorder). At odds with this is a highly structured content delivery timetable. For example, a year-long timetable may begin with cardiovascular disorders in week 1, progressing through to rheumatological disorders in week 36. Conversely, a student may see a patient with gout in week 1 and patient with angina in week 36 - content delivery is disjointed from the clinical experience.

Summary of work: AXM (Augmented Experience Modules) is a web-based, multimedia, content delivery and assessment package accessed by hand-held internet-enabled devices. AXM integrates the unpredictability of patient encounters by facilitating just-in-time learning. In the clinical encounter AXM provides prompts and helpful tips (text, multimedia) to aid eliciting symptoms and signs. Students enter requisite investigations and management then answer a series of multiple-choice questions.

Summary of results: 47 conditions are currently being developed into AXM.

Conclusions: We will outline the AXM development process and demonstrate a prototype.

Take-home messages: AXM has the potential to enhance clinical learning.

9W/4
Using semi-interactive computer animations as a tool for teaching science

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Background: Teaching scientific concepts to undergraduate students is a challenge in terms of engaging, enthusing and justifying the content being taught. This work describes the development of a platform that uses bespoke animations to deliver core science to students in an innovative way.
Summary of work: The basic template structure has been developed using Adobe Flash. By re-programming how Flash templates run, the files may be used in a 'traditional lecture' environment but also be deployed on websites. 2D interactive animations are achieved using Flash programming alone. 3D animations utilise Daz3D Carrara software for more engaging graphics.
Summary of results: Feedback received from undergraduate students has been universally positive. A single interactive session was viewed on our VLE over 1700 times in 3 weeks. Students themselves are beginning to use animations for peer-group teaching and assessed presentations.
Conclusions: Development of this platform for teaching continues to be extremely popular amongst students. Using Flash programming allows for a more immersive and engaging environment for the student. Interactive animations describing complex scientific or medical processes allows students to maximise the impact of 'visual learning' and work at a pace that suits them.
Take-home messages: Developing interactive animation-based teaching is more labour intensive than using static figures/illustrations, but the educational benefits are clear.

9W/5
A German online-learning program "prevention of sexual child abuse" for medical students and health professionals

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Jörg M. Fegert (*Ulm University Hospital, Clinic for Child and Adolescent Psychiatry, Ulm, Germany*)

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Background: The political and public debate on child sexual abuse in Germany since 2010 has shown that dealing with this must be incorporated into the medical education and further training of health professionals.

Summary of work: We will be developing and evaluating a german online-learning program "prevention on child sexual abuse" for health care professionals (2011-2014). It is funded by the German Federal Ministry of Education and Research (BMBF). The curriculum consists of 22 learning units, each about 45-60 minutes and two overall learning units, self-reflection and legal right aspects. There are knowledge based texts as well as videos and interactive exercises. It can be done as a self-study stand alone course or as a blended-learning approach (with face to face courses).
Summary of results: The aim is the establishment of a certificated, standardized and evaluated web-based training resource for health professionals in Germany. The access will be free of charge.
Conclusions: The benefit of an online learning program dealing with sexual child abuse is that the learner can use it at any time and anywhere, and that it fills a gap in the existing opportunities.
Take-home messages: Health professionals act as first contact so they have to be provided with proper strategies to react to child sexual abuse.

9W/6
YouTube videos as a learning resource for nervous system clinical examination

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Background: Web 2.0 sites such as YouTube and Google have become useful resources for knowledge and usually used by students as a learning resource. This study aimed at assessing YouTube videos covering nervous system clinical examination.
Summary of work: A research of YouTube was conducted from 2 November to 2 December 2011. Only relevant videos in the English language were identified. For each video, the following information were collected: title, authors, duration, number of viewers, posted comments, and total number of days on YouTube. Using criteria comprising content, technical authority and pedagogy parameters, videos were rated independently by three assessors and grouped into educationally useful and non-useful videos.
Summary of results: A total of 1242 videos were screened; 108 were found to be relevant. Analysis showed that 48 (44.4%) videos provided useful information on the nervous system examination. These videos scored (mean ± SD, 14.9 ± 0.2) and covered examination the whole nervous system (17 videos), cranial nerves (71 videos), upper limbs (8 videos), lower limbs (8 videos), coordianation (4 videos). The other 60 (55.5.7%) videos were not useful educationally; scoring (10.9 ±3.2). The total viewers of all videos were 2,192,786 while useful videos were viewed by 1,079,424 viewers. The differences between assessors were insignificant (p= 0.95 to 1.00).
Conclusions: YouTube provides an adequate learning resource for nervous system examination which can be used

by medical students. However, there are fewer useful videos covering balance system examination.

Take-home messages: Medical students searching for learning resources covering nervous system examination may consider YouTube videos.

9W/7
Cardiorespiratory examination on YouTube

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Background: To assess YouTube videos covering the clinical examination of the cardiovascular (CV) and respiratory (RS) systems.

Summary of work: During the period from 2 November to 2 December, YouTube was researched by three assessors for videos covering the clinical examination of the CV and RS systems. Only relevant videos in the English language were identified. For each video, the following information were collected: title, authors, duration, number of viewers, posted comments, and total number of days on YouTube. Using criteria comprising content, technical authority and pedagogy parameters, videos were rated independently by three assessors and grouped into educationally useful and non-useful videos.

Summary of results: A total of 1920 videos were screened and only 72 and 74 were found to be relevant to the CV and RS examinations, respectively. Further analysis revealed that 26 (36.1%) and 35 (47.3%) provided useful information on the CV and RS examinations; scoring (mean ± SD, 14.5 ± 0.5 and 14.8 ± 0.3), respectively. The other videos 46 and 39 covering CV and RS, respectively were not useful educationally, scoring (10.9 ±2.1 and 11.9 ±2.1), respectively. For both, viewership per day for useful and non-useful videos was not significantly different. The difference between the three assessors was insignificant.

Conclusions: There is a good number of videos on YouTube covering the cardiorespiratory examination that can be used as a learning resource.

Take-home messages: YouTube provides a useful resource for learning cardiorespiratory examination.

9W/8
Producing a video clip for a Medicine and the Humanities assignment in second year medical studies

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Background: Reflecting on the medical humanities can offer personal development for the physician. How does fiction depict the medical profession? Second year medical students were asked to use a video/film depiction of a medical practitioner as the trigger of a reflection adapted from the Dewey 3 stage process.

Summary of work: Documentaries and comments on a physician's life or action were not the object of the assignment. The student had to select 30 to 45 seconds of a film or YouTube® and provide a link to that clip.

Summary of results: All students provided a standalone excerpt from the source. They produced a 30 second film expressing their reaction. The marking criteria attributed 55% of the score to the analytical and reflective process and the rest to technical aspects.

Conclusions: There were exceptional contributions. The topics ranged from moral conflicts to challenges to one's health. There were no issues about multiple uses of sources. No student commented on the cinematographic aspects of the clips indicating that they all paid attention to the message rather than the medium. The technical aspects of producing the videos were easy to grasp and minimal support was needed; academic support on the reflective process was the most important. Using video as the output for a reflective student assignment is practical and valid.

Take-home messages: Video replaces written reports easily. The format is felt to be appropriate for future educational activities of the potential graduates. (A group of students have agreed to allow viewing of their assignments for this conference.)

9W/9
Assessment of quality of surgical training videos: A review and proposal of a new tool

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HA Elhassan (*Singleton Hospital, ENT, Swansea, United Kingdom*)
TI Phillips (*Cardiff University, Medical School, Cardiff, United Kingdom*)

(*Presenter:* A Robb, Singleton Hospital, ENT, Postgraduate Education Centre, Singleton Hospital, Swansea SA2 8QA, United Kingdom, aorobb@gmail.com)

Background: To review the methods previously used to assess the reliability and content of publicly-available videos relating to surgical education and training.

Summary of work: Existing articles were found using multiple searches on PubMed (key-word and MeSH terms). Articles which included "video" and a reference to surgery or education in the title were included. The "Related Citations" function on PubMed was then used to widen the search. Articles focussing on patient education were excluded. Articles which assessed videos for teaching purposes were included. The methods used to assess these videos were then examined and collated.

Summary of results: The methods used in the existing literature consist of questionnaires developed by the authors.

This varies according to the demands of each piece of research but could in some cases be applied to surgical educational videos in general.

Conclusions: There is no definitive method that is currently used to assess the reliability and content of educational videos for surgical training.

Take-home messages: Given the recent rapid increase in popularity of websites providing educational videos, a standardised method of assessing their suitability for use in surgical curricula would be of benefit to trainees and institutions alike.

9W/10
Research and development into the gamification of medical education

Adrian Raudaschl (*Southern General Hospital, General Surgery, Glasgow, United Kingdom*)

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Background: Research into the gamification of medical education as a means to complement and enhance existing education models.

Summary of work: We researched and applied engaging elements used by video games such as intuitive interface, reward models (scores, badges) and competition to a range of medical/surgical patient case scenarios.

Summary of results: The result was an application for smartphones called 'Ward Round'. We wanted to create a fun way for students to engage with a medical case in a holistic way i.e. we designed scenarios so a student would be expected to develop a differential diagnosis, decide on investigations, initial treatments and show a general understanding of anatomy and pathophysiology.

Conclusions: Our approach to rethinking the patient case scenario for teaching purposes was found to be fun and engaging. Further research and development into the gamification of medical education may have potential in the existing curriculum to help facilitate the acquisition of medical knowledge and its practical application.

Take-home messages: Research has shown that multiple testing of a topic improves both long-term recall and comprehension through the methodology of test-enhanced learning. We aim to pair test-enhanced learning with attractive and engaging elements which may encourage increased informal assessment on a voluntarily basis.

9W/11
Training and CPD in Anaesthesia: the lights are on!

Olly Jones (*Australian and New Zealand College of Anaesthetists, Education and CPD, Melbourne, Australia*)

(*Presenter:* **Maurice Hennessy**, Australian and New Zealand College of Anaesthetists, Education and CPD, 630 St Kilda Road, Melbourne 3004, Australia, education@anzca.edu.au)

Background: The world of the contemporary anaesthetist is time pressured with multiple demands to meet training and professional development requirements. The Australian and New Zealand College of Anaesthetists (ANZCA), is utilising cutting edge technology solutions to make training and CPD interactions easily accessible for anaesthetists whether they are at work, home or on the move. ANZCA is preparing for the implementation of a revised training program in 2013 and establishing a mobile-enabled online training portfolio with capability for trainees to enter cases and workplace based assessments in real time. In conjunction with the development of specialists in anaesthesia is the need to develop the specialists' skills to teach and confidence to embrace workplace based assessments and a culture of honest and effective feedback. An online clinical teacher program offers this educational pathway. Training and learning can happen in many environments and the design of learning resources is undertaken in full consultation with the anaesthetists, educationalists and educational technologists. This poster will highlight the current educational technology developments including the introduction of both Training and CPD Portfolio Systems with mobile-friendly interface designs, the launch of the Online Clinical Teacher Course and the provision of podcasts and regular real-time webinars for trainees preparing for the Primary and Final anaesthesia examinations.

9W/12
iRadiology: A curriculum based web resource, to help students help themselves

Anna Maria Abadir (*University of Ottawa, Medicine, Ottawa, Canada*)
Alireza Jalali (*University of Ottawa, Faculty of Medicine, Ottawa, Canada*)
Rebecca Peterson (*University of Ottawa, Faculty of Medicine, Ottawa, Canada*)

(*Presenter:* Anna Maria Abadir, University of Ottawa, Medicine, 203 Freedom Private, Ottawa K1G 6W1, Canada, aabad063@uottawa.ca)

Background: Teaching radiology in the time limited setting of undergraduate medical education is a challenge for educators and students alike. Existing Internet resources are often overwhelming and not tailored to student needs; therefore a curriculum tailored web resource is needed.

Summary of work: iRadiology, a bilingual(English and French) digital radiology library was created, based on the curriculum learning objectives and timeline set by the University of Ottawa. Modules are based on curriculum timeline and topic and are further subdivided by type of imaging technology (i.e. X-ray, CT). Anatomical images helping in three-dimensional understanding of the radiological images were incorporated into each learning module in order to encourage knowledge integration, and a comprehensive quiz follows every unit.

Summary of results: Usage data collected on a monthly basis shows increased use following radiology teaching and preceding exams, suggesting value to student learning.

Conclusions: iRadiology provides a practical and innovative forum for educators to communicate desired knowledge through focused content, and students to supplement their learning independently and efficiently. Further evaluation of this tool's effects on learning through objective pre-and post-tests is underway.

Take-home messages: This web-based, curriculum specific learning technology resolves time restraints on learning, for both, educators and students.

9X Posters: Leadership/Management

9X/1
Leadership: Who's leading who?

Rebecca Jane Critchley (*Northern Deanery, Trauma and Orthopaedic Surgery, Newcastle Upon Tyne, United Kingdom*)

(*Presenter:* **Sean Williamson**, Postgraduate Medial Education, James Cook Hospital, Middlesborough, United Kingdom)

Background: Previously there were few defined leadership roles. A doctor's clinical acumen resulted in leadership roles rather then leadership skills. Clinical achievements are still perceived more highly than leadership achievements, resulting in disinterest and a lack of training.
Summary of work: During a group discussion at a teaching and training course held at a district general hospital 24 doctors discussed two questions: • Which doctors need to be taught leadership skills? • When is it the right time?
Summary of results: Leadership teaching should be taught to everyone, accommodating varying levels. Acquisition of skills should be a lifelong process, with formal teaching starting in medical schools. Students and doctors should be encouraged to attend leadership courses.
Conclusions: Leadership skills can benefit everyone, from the junior doctor up to the consultant. Robust leadership skills result in doctors who can better manage themselves and delegate appropriately, ultimately leading to better patient care. If we are to change the views of future doctors and inspire them, we need to teach these skills in the undergraduate environment.
Take-home messages: Leadership learning should be a life long process starting at the undergraduate level.
Great leaders will not only dictate the success of the National Health Service but they will also help drive the medical profession forward.

9X/2
Taking the lead – Needs assessment for medical management and leadership training in the undergraduate medical curriculum in one UK medical school

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Background: The changing landscape in UK healthcare requires doctors to develop and sustain management and leadership skills. This preliminary study explores the need for early intervention in aiding the development of such skills.
Summary of work: A modified Hennessy-Hicks training needs assessment questionnaire was administered to 1st year undergraduate medical students (n=120). This validated tool aimed to identify training needs highlighted by a proposed disparity between the importance attributed to management/leadership tasks, and students' stated ability to perform these tasks.
Summary of results: A need for early intervention was recognized. 60 students completed the questionnaire. Analysis revealed that students perceived management/supervisory tasks to be of major importance; however, ranked their ability to perform these tasks as low. Therefore, a new medical management and leadership course was designed for 2nd year undergraduate medical students. Comprised of eight three-hour workshops, it aims to introduce principles of leadership and management and their application to the clinical environment to pre-clinical students. 30 students (50%) reported an interest in enrolling in a future course.
Conclusions: The needs analysis highlighted a requirement and desire for management and leadership training early in the undergraduate curriculum.
Take-home messages: Management and leadership skills are important in clinical practice and should form part of the undergraduate curriculum at medical school.

9X/3
The doctor's role as manager. How do junior doctors perceive and learn the medical role as manager – and how can they best be supported as potential leaders in the healthcare system of the future?

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Background: The junior doctor's role as manager is not sufficiently supported in postgraduate medical education in Denmark, and at the same time junior doctors do not show a great interest in this role. This could become a problem for the healthcare system of the future as there will be a need for medical managers.
Summary of work: Empirical data from a focus group interview with 10 junior doctors on the medical role as manager was analysed with qualitative phenomenological and hermeneutic methods. The defined themes were discussed in relation to theoretical perspectives on management and learning (e.g. Mintzbergs theory), and implications for practice deduced.
Summary of results: Junior doctors do not feel prepared to take on leadership. Leadership training in the daily clinical work setting and through feedback/coaching from managers, colleagues and other role models is recommended as the

most important learning strategy. Junior doctors have a clear vision of good management/the good manager, but they recognise the dilemmas and conflicts that the doctor meets in the role as manager, and these affect their career choice.

Conclusions: The junior doctor needs exposure to and support in the leadership role, and the doctor's role as manager needs clarification.

Take-home messages: Focus on leadership training is needed.

9X/4

Department head's leadership style and its relation between organization atmospheres. Views of faculty members and department head

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Background: In each organization success depends on human resources. Then, choices of appropriate leadership styles to increase effectiveness, productivity and efficiency is essential for the organization.

Summary of work: In a cross sectional study, participants were all department heads and their faculty members. Data were collected by a valid and reliable questionnaire about leadership styles. Maximum score in each style was 40. Scores more than 30 in each style meant that individual had that style. If the score was between 15-30 he was in the transition phase. Also, if each person scored the same in two styles he was in transition from one style to another. Scores less than 15 meant no style. Also scores less than 3 meant unknown individual leadership style.

Summary of results: Most of the department heads (73.3%) had 1-5 years experience of management. Most of them had no clear style (46.7%), 26.7% had delegate style, 20% were in transition and only 6.7% had democratic style. Also 80% of faculty members believed that the leadership style of managers was not a clear style.

Conclusions: Department heads have no clear understanding of leadership styles and it is necessary to educate them about these styles for better achievement.

Take-home messages: It is necessary to teach department heads about leadership styles.

9X/5

Knowledge and opinions of undergraduate medical students on NHS structure, medical management and leadership

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Background: Little is known about the knowledge and opinions of UK medical undergraduates on NHS structure medical management and leadership. Recent reports have emphasised the importance of developing these attributes whilst highlighting a possible knowledge gap.

Summary of work: A 9 point questionnaire distributed to a random sample of 240 students, evenly distributed across the six year groups at Imperial College Medical School, investigated the opinions of (1) the quality and importance of management teaching, (2) the importance of management knowledge as practicing doctors and (3) assessed the knowledge on basic management topics.

Summary of results: 84% think that knowledge of NHS structure, medical management and leadership is important and 61% feel more is required from their curriculum in these areas. Knowledge levels and perception of its relative importance both increased as students became more senior.

Conclusions: Medical management and leadership skills are currently lacking in undergraduates, despite a desire amongst many to learn and develop these areas, and a responsibility upon teaching faculty to ensure this is embedded in clinical placements.

Take-home messages: This study supports teaching of medical management and leadership as an integrated subject in the medical curriculum currently being implemented at Imperial College London and other UK medical schools.

9X/6

Assessing the Performance of Heads of Clinical Departments Based on Supportive Leadership Behavior Style in Tehran University of Medical Sciences

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Background: One of the most influential management styles is supportive leadership behavior which needs to be assessed in managers' performance in clinical departments. This study aimed at assessing the performance of heads of clinical

departments of the medical school at Tehran University of Medical Sciences in 2012.

Summary of work: This was a cross-sectional study conducted in six clinical departments of Tehran University of Medical Sciences in 2012. The population of the study consisted of about 1000 clinical faculty members from whom 180 were selected by stratified random sampling. The instrument of the study was a valid and reliable questionnaire revalidated for administering in the new setting. The data were then analyzed by SPSS using descriptive and inferential statistics.

Summary of results: The majority of faculty members (40%) believed that their heads of departments were less concerned about encouraging the faculties. On the other hand, 64% of faculty members believed that the heads of departments enjoyed more supportive behavior by providing positive feedback. Respect for human values was found to be another aspect of supportive behavior (72%).

Conclusions: The findings of the study suggest that heads of departments and university administration should take the issue of encouragement into consideration to be supportive in their managerial behavior.

9X/7
Regional organizational benefits of decentralized medical education

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Background: Medical faculty of the University of Turku, Finland has for several years organized a part of undergraduate clinical education outside Turku in the city of Pori, province of Satakunta (160 km from Turku). Student feedback of this teaching has been predominantly good, but the experiences of the local educational organizations have remained unclear.

Summary of work: A questionnaire concerning the experiences of decentralized medical education was filled by the teaching staff in the Central Hospital and Health Care Centre of Pori, and further by the health administration staff of Pori and Satakunta hospital district. The data were qualitatively analyzed.

Summary of results: Responses of the local teaching and administration staff indicated that they are highly motivated in contributing to medical education and consider teaching as an important part of their health care units' activity. Teaching medical students locally was believed to develop the local health care organizations and to maintain standards of health care high. Decentralized education had created important regional health care networks and relieved shortage of doctors regionally. Still, more emphasis on close co-operation with the university was required.

Conclusions: Decentralized medical education seems to have a number of recognizable organizational benefits in the regional units. Still, functioning organizational co-operation with the university forms a continuous challenge.

Take-home messages: Decentralization contributes to considerable organizational advantage in medical education.

9X/8
The development of School related Study Leave (SL) Guidance for programme entrants in the Postgraduate Deanery for Kent, Surrey and Sussex (KSS)

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Background: All trainees in programmes (Foundation 2-year to Certificate of Completion of Training (CCT)) have an entitlement to Study Leave and funding to support it.

Summary of work: We describe the evolution of SL Guidance for its administration, which serves to inform Director's of Medical Education (DMEs) and their local processes. The majority of SL funds and time is assigned via the DME at the Local Education Provider level. Some Schools top-slice the funds to help pay for School organised events, e.g., training relating to assessment methodologies, and regional training events.

Summary of results: We summarise the evolution of SL Guidance within KSS. Once a singular generic document, it now takes account of the tailored nature of SL to curricular requirements. This is now decreed by Primary Care and Secondary Care specialties. Some Schools have begun to top-slice SL centrally to accommodate curricular mandated requirements, i.e., specific training and educational events.

Conclusions: In the UK PGME system, SL funding and administration has become increasingly complex. The Deanery has a requirement to update the guidance on a regular basis to reflect changing utilisation of funds.

Take-home messages: There is a requirement for tailored SL guidance in UK PGME.

9X/9
National Recruitment into Core Surgery - Improvements in 2012

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Background: Recruitment to Core Surgery in England and Wales became a national process in 2011.

Summary of work: The KSS Deanery co-ordinated and lead the process, resulting in all CT1 posts being filled. This success resulted in Scotland and Northern Ireland joining National

Recruitment for 2012. The Pilot Steering Committee overseeing the process introduced other significant improvements this year.

Summary of results: These include: Applicants complete a summary sheet, highlighting their achievements and commitment to surgery and including a supporting statement from their consultant; The Portfolio Station was revised, candidates completed a detailed Proforma. Two interviewers then scored the Proforma against set criteria and at interview questioned the candidate to ensure probity; The Question Bank was revised and expanded; Interview stations weighting changed (Clinical, Portfolio, Management). The score sheets were amended, with appointable candidates needing to score a minimum of two thirds of available marks. On interview days interviewers undertook mandatory panel training each morning and attended the evening wash up session. Within their chosen Deanery candidates can upgrade to their preferred post during the offers stage.

Conclusions: National recruitment to Core Surgery with its strong emphasis on quality management is ensuring selection of the best young doctors to undertake a surgical training.

Take-home messages: National Recruitment improves selection.

9X/10
The role of the Andalusian Public Health System in the Promotion of Competence Development within the Educational Continuum

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Background: In year 2000 the Quality Plan in the Andalusian Public Health Care System (SSPA) adopted competence-based management and quality has since been directly associated with health professions education.

Summary of work: In 2008 the Health Secretariat released the Strategic Plan for Comprehensive Training (SPCT) in the SSPA, which encompasses undergraduate studies in partnership with universities, specialization and continuing cducation based on key competences.

Summary of results: With 20 thousand trainees in all levels in health services in 2010 the implementation of SPCT has demanded new tools such as PortalEIR y PCCEIR. The Health Quality Agency (ACSA) has accredited professionals,

residence programs, continuing education programs and activities, and public institutions offer a distance-learning tutors course and maintains CMAT, a large simulation center, among other initiatives.

Conclusions: Investing in participatory needs assessment, formative evaluation, TICs development have benefited from the political affinity among health officials for several mandates in Andalusia. Competence-based curricula have operationalized professional education as a basic responsibility of SSPA.

Take-home messages: The dialogue between health and education sectors with design of educational technologies have supported quality training in large scale in Andalusia. Specific budgeting fostered participation in planning that legitimizes new methodologies and educational innovation, grounded on the commitment with the SSPA.

9X/11
Improving psychiatry training in the UK foundation programme

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Background: Foundation placements in psychiatry were developed to enable foundation doctors to acquire relevant broad competences, and to encourage consideration of psychiatry as a career. The South Thames Foundation School (STFS) is the largest foundation school in the UK, with 800+ 2-year foundation programmes in South London and KSS deaneries. STFS provides 16 F1 and 31 F2 psychiatry posts equating to 151 psychiatry placements.

Summary of work: We reviewed existing information on psychiatry posts from quality visits, trainee questionnaires and minutes of local faculty group meetings and these revealed largely negative post evaluations. We then invited all doctors currently in an STFS psychiatry placement to participate in a workshop to explore the issues further.

Summary of results: The focus group results gave us further information on trainees' concerns about the general quality of psychiatry posts; supervision and induction; isolation of mental health trusts; the professional position of junior psychiatrists; and responsibilities related to the Mental Health Act and risk assessment.

Conclusions: Recommendations to address these issues have been developed and are now being implemented and reviewed by local education providers.

Take-home messages: The conclusions are also relevant to the quality management of foundation posts, responses to the Collins Report (2010), recommendations of the Psychiatry Taskforce and future recruitment into psychiatry.

9X/12
Postgraduate School of Clinical Academic Training

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Background: Clinical academic medicine is critical to the future of medical education and research. However, career pathways for clinical academic can be difficult and less straightforward than those of clinical careers, which now increasing well developed and streamlined.

Summary of work: Academic training posts are funded by the National Institute of Health Research (NIHR)- the Integrated Academic Training Scheme. Because of the complexity of combining clinical and academic work these posts can be difficult to set up and to manage, requiring liaison between deanery, hospitals and the medical school. The Severn Deanery have appointed a Head of Clinical Academic Training to be the focus for this work. This individual works primarily across the University of Bristol Medical School and the Deanery,

Summary of results: The session will outline the work done by the school across recruitment, assessment and progression. -provide a key contact for academics, trainees and hospitals with respect to clinical academic training.

Conclusions: The Severn Clinical Academic Training School provides a key focus for academic trainees.

Take-home messages: Academic trainees can benefit from a dedicated focus within a deanery.

9X/13
The Business of Medicine: Training Medical Students in Billing and Coding

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Background: Practice management has increasing importance in Family Medicine (FM) yet is often neglected in clerkship training. Our study is one of the first to describe an undergraduate medical student curriculum in medical billing and coding and explore its effect.

Summary of work: The Eastern Virginia Medical School FM clerkship curriculum has integrated medical billing and coding in its training. Students are initially trained in a lecture and practice session where they review, take notes, and code a standardized patient (SP) visit using a simulated electronic health record (EHR). A discussion of proper techniques and

effects of incorrect coding follows. Students demonstrate their learning by proper coding of their notes during the clerkship's ten SP encounters.

Summary of results: In addition to explaining the curriculum, results of a brief pre/post clerkship training learning survey with M3 medical students (N=64) will be discussed.

Conclusions: Given the complexities of modern health care delivery and insurance systems, there is a need to start training practitioners early about medical billing and coding. Students' feedback and demonstrated learning will be used to improve the clerkship curriculum, enhance student engagement, and prepare them for entry into the complex medical system.

Take-home messages: Integration of practice management into student training can ease transition into the medical system.

9Y Posters: Reflection, Clinical Reasoning and Critical Thinking

9Y/1
"Learn how to dance, but do not know why you are dancing": A comparative case study on the role of clinical skill tutorials at the University of Melbourne and the University of Indonesia

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Background: It is still debatable whether clinical skills tutorials in the pre-clinical year should aim at developing students' clinical reasoning (CR) in addition to the mastery in psychomotor skills.

Summary of work: This study explored CR teaching and learning in two undergraduate medical courses (University of Melbourne, UoM, University of Indonesia, UI) using a comparative case study. Four types of data were used: medical students' responses to the Diagnostic Thinking Inventory (DTI) (years 3 and 6), medical student interviews (same years), academic teacher interviews (i.e PBL tutors, clinical skill tutors, clinical teachers), and examination of curriculum documents.

Summary of results: UoM and UI students and academics felt that the clinical skill tutorials in their course did not aim to teach CR. They however believed that in addition to knowledge, clinical skill acquisition should be seen as a building block in clinical reasoning development.

Conclusions: The role of clinical skill tutorials for teaching CR was limited in both institutions. The value of these tutorials for CR development can be enhanced by incorporating them in CR teaching and learning framework in both courses.

Take-home messages: Clinical skill tutorials in the pre-clinical stage can be designed to facilitate clinical reasoning skill development by considering student level of knowledge and skills.

9Y/2
Learning Clinical Reasoning in the preclinical years

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Background: A student gets into a medical school because he/she wants to attend patients to diagnose and treat them. To do this they need to learn Clinical Reasoning and the only way to learn it is solving clinical cases. In the preclinical years they can face clinical problems on paper-pen patients.
Summary of work: We designed a Physiology course to be covered through the analysis of 60 clinical cases. The first week, they learned, besides the physiology competencies, a strategy to analyze a clinical case. From the second week they received in advance the case to be solved with questions directed to solve it by applying physiology. The answers are discussed in class with the professor as a facilitator.
Summary of results: The challenge of solving clinical cases is a great motivation to study, and the questions direct his/her attention to the physiological most relevant concepts. By using the same strategy to solve each case they learn to analyze them identifying the physiopathology and getting a diagnosis.
Conclusions: Students can learn Clinical Reasoning in preclinical years by solving clinical cases using the right strategy to approach them.
Take-home messages: The only way to learn Clinical Reasoning is solving clinical problems. It can be done in preclinical years with paper-pen patients.

9Y/3
Teaching clinical reasoning. What is the best evidence to guide practice?

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Background: 'Clinical reasoning' is a key skill of being a doctor. Poor clinical reasoning may lead to stress and potentially medical errors. Teaching clinical reasoning does not involve teaching facts, but teaching thinking. There has been debate about whether it is possible to teach this skill.
Summary of work: The aim was to review the literature on teaching clinical reasoning to medical students and to identify the evidence to guide best practice. A literature review was undertaken using systematic search strategies. Studies which met the inclusion criteria were appraised using critical appraisal tools, and the outcomes synthesised using a mixed methods approach to identify guidance on best practice.
Summary of results: Eleven studies were identified which were of sufficient quality. Small group teaching was more effective than lectures or computerised methods. A case based approach, and use of frameworks to guide students to think in a structured manner, improved clinical reasoning. Tutors and students can share their clinical reasoning processes by using the 'think-aloud' technique.
Conclusions: Teaching clinical reasoning is best done in small groups, using case based examples. Frameworks to guide reasoning processes and 'think-aloud' techniques improved students' clinical reasoning skills.
Take-home messages: It is possible to teach clinical reasoning skills using methods which are practical and feasible.

9Y/4
Clerking 'crib' sheets for medical students: developing clinical reasoning skills in a surgical emergency unit

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Background: Medical students have few opportunities to clerk new patients and thereby develop clinical reasoning skills. Clinical reasoning is a dual process dependant on intuition and analytic thinking. With their limited clinical experience, students rely primarily on developing an analytical approach.
Summary of work: Clerking 'crib' sheets for the common referrals to our surgical emergency unit were designed for use by students. Each sheet started with differential diagnoses, whilst subsections provided tips to help 'rule in' or 'rule out' pathologies thereby modelling an analytical approach. Qualitative feedback on students' and doctors' attitudes towards this novel resource was collected and analysed.
Summary of results: Positive feedback was obtained from first and final year students. Senior students - despite their increased experience - also valued the clerking guidance. The sheets provided a learning opportunity independent of the availability of teaching doctors. Clinicians reported that they provided a useful framework for providing feedback to students on their reasoning skills.
Conclusions: Clerking 'crib' sheets can be designed to target acquisition of analytical reasoning skills. Students and doctors were positive about this resource for learning and teaching.
Take-home messages: We provide proof of concept that clerking 'crib' sheets can be a useful resource for learning in a surgical emergency setting.

9Y/5
Interpretation of abstracts in a novel PBL case for first year medical students

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Background: The National Board of Medical Examiners has developed a question format to be introduced on the United States Medical Licensing Exam, which requires critical appraisal of an abstract. At Ross University School of Medicine, to develop these Evidence-Based Medicine skills, students appraise articles as part of PBL.
Summary of work: The activity requires students to read an abstract; categorize the abstract into background, methods, results, conclusion; summarize the main points of the abstract; and use a checklist to identify concepts. Students read and summarize the article's introduction and apply the checklist to it. Students then leave with the task of applying the checklist to the entire article. They also identify and appraise a related article. On the final exam, students read an abstract and answer a related MCQ.
Summary of results: Results from MCQ on final exam in April 2012, pending analysis.
Conclusions: Based on anecdotal reports, this format appears to be successful in teaching students how to analyze an abstract.

9Y/6
Teaching critical thinking in undergraduate medical curriculum

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Background: Along with vertical integrated themes in the reform of undergraduate medical curriculum at Tehran University of Medical Sciences (TUMS), longitudinal theme of reasoning, decision making and problem solving was presented for the first time.
Summary of work: In planning phase, initial draft was developed by experts. Then working group members, including basic science and clinical faculties and a number of medical students reviewed the draft and suggested additional revisions. So that, the pilot stage was conducted with the presence of second-term medical students. Based on the information obtained through the pilot, the program was finalized. The final program was presented in eight sessions of two hours in the first semester of course for 161 medical students. In order to determine the students' satisfaction level, the satisfaction survey forms were given to learners.
Summary of results: In the evaluation phase, 47.1% of students stated that the relevancy, adequacy and attractive of prepared texts were good/excellent and 39.9% of students evaluated them in average level. Also, 46.3% students believed that the texts were good and 34.1% average, in motivating students to learn and apply content.
Conclusions: The results of all three phases of the program could be applied as a guide in the next courses in Tehran University of Medical Sciences and other universities.

9Y/7
"Something that most of us do anyway": Personal reflection in medical students

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Background: The use of reflection as a learning approach is increasing in medical education, often based on the assumption that students will not reflect without being encouraged to. Personal reflection is used to describe students' ability to critically reflect on own learning and functioning. The assumption here is also that medical students seem not to reflect spontaneously. We explored students' level of personal reflection and validated a questionnaire that attempt to measure personal reflection.
Summary of work: We translated and adapted the Groningen Reflection Ability Scale (GRAS) to use in a Danish context. It was pilot tested and we further validated the GRAS scale in terms of test-retest reliability and confirmatory factor analysis. With a cross-sectional design, we finally measured the level of personal reflection of the medical students at Aarhus University across all semesters.
Summary of results: We present the validated questionnaire and the findings describing the levels of personal reflection from medical students sampled across the semesters at Aarhus University (n=325).
Conclusions: We discuss whether a questionnaire method is appropriate for gaining knowledge of student reflection and if

we now have an instrument to measure 'reflective' outcomes of educational interventions.

9Y/8
Patient Art can lead to Transformative Education

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Background: The use of art in medical education is one way for trainees and physicians to enhance their understanding of the patient's unique and personal experience of illness. It is also a unique method for patients to communicate with physicians about their life experiences.
Summary of work: In two sessions we exposed medical students to the photography and narrative of a patient living with sickle cell disease. Students later had a capstone exercise for the sociocultural curriculum that asks for them to reflect on their development over the first and second years of Medical School. We conducted an interpretive thematic content analysis of 75 students' reflective essays discussing their experience with the art-based learning exercise.
Summary of results: The analysis revealed that the artistic narrative helped students recognize their own biases and drew attention to the ways in which bias amid the physician-patient encounter can incite disparities in the care delivered to sickle cell patients.
Conclusions: Our work proposes that the unique combination of methods–art, oral narrative, and written reflection–helped students acknowledge their own bias and the ways taken-for-granted assumptions influence patient care and may serve to counter future discrimination toward certain patient populations–not exclusively patients with sickle cell disease.
Take-home messages: The introduction of patient stories is one way to teach about bias and self-reflection in medical school curricula.

9Y/9
Implementing ongoing reflective practice in the curriculum to support the development of life-long learning competence

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Background: Recent studies showed that being a life-long learner is an important characteristic of future doctors. Therefore the notion of developing reflection and reflective practice is respectively becoming an important agenda in Faculty of Medicine, Universitas Indonesia.
Summary of work: An evaluation of reflective practice was conducted to recognize a curriculum path in creating an ongoing process in developing student's self-reflection ability. Level of student development was taken into consideration, as well as learning activities which enabled self-reflection and the opportunity of IT support.
Summary of results: A once per semester self-reflection is considered sufficient. Hence reflection on progress test results will be suitable to serve that purpose. With the help of academic advisor, students are also encouraged to do more self-reflection on significant experience while recognizing growth of their competences in medicine. In the end, the final year self-reflection is expected to show the skill of every student to be a life-long learner.
Conclusions: Developing student's skill to be a life-long learner must be designed meshed in the curriculum to ensure the ongoing process is taking place accordingly.
Take-home message: It is important to do an in-depth probe to the curriculum – hidden or written – in order to ensure that an ongoing process of skill development is recognized.

9Y/10
Reflecting on abuse in the workplace

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Background: Abuse is present in the health care environment and students frequently report being exposed to it. However they dislike reflecting on it, resisting the challenge to explore their own thoughts, feelings and behaviours.
Summary of work: In helping to unpack their own experiences and to become change agents, critical reflection is now a key focus – facilitating a shift from consciousness to action. The Six Step Spiral for Critical Reflexivity (SSS4CR) has emerged as an innovative tool to reflect on alternative strategies for action. This framework is now on the Faculty's online learning system. Students choose an incident then reflect on it in a sequential process guided by probing questions. Responses are posted in the online forum, sent to convenors or simply kept private and included in the student's personal portfolio.
Summary of results: Evaluations point to the usefulness of the spiral. It provides a practical process for students to follow in responding to violations they observe in the workplace rather than frequently feeling helpless and vulnerable themselves.
Conclusions: Critical reflection can be successfully encouraged and shared by using the Six Step Spiral.
Take-home messages: Interactive visual frameworks are valuable vehicles enabling students to develop insights contributing to their long-term use of reflection.

9Y/11

The challenge of clinical approach by SOAP notes in small group discussion at preclinical level

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Background: Critical thinking and clinical reasoning skills for history taking, physical examination and lab investigation are essential for higher clinical year of medical students that use SOAP notes as a tool to analyze clinical cases. We conducted clinical approach with modified SOAP notes in small group discussion of third year medical students to prepare for the next clinical year.
Summary of work: Third year medical students (n=183) were divided into 18 groups and assigned to solve six clinical cases (one case/week). Each group discussed and reported the "why" behind what they were being taught in SOAP notes. At the end of the week, the selected groups demonstrated how to approach the case in class presentation.
Summary of results: The students learned to obtain essential history taking, report pertinent physical findings, generate reasonable differential diagnoses and determine investigations. They were familiar with SOAP notes and performed better clinical thinking skills after participating in class presentation.
Conclusions: Implementation of clinical approach by SOAP notes in small group discussion clearly allowed the preclinical students not only to integrate basic science knowledge but also develop critical thinking to solve the clinical problems.
Take-home messages: Teaching of a clinical approach should be started in early preclinical students for greater outcome at a clinical level.

9Y/12

Interdisciplinary training in clinical decision making

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Background: Training health profession students in inter-professional work is essential both for the adequacy of their postgraduate competence and for the school's social accountability. Different approaches have been carried out, as student-operated hospital wards, or skills lab training on inter-professional co-work in acute medicine. Few have however looked into inter-disciplinary training in clinical decision making in primary health care, especially when the patient is not a simulated patient.

Summary of work: We are reporting from a pilot project where last year students in medicine, dentistry, pharmacy, dental hygiene and master programme in clinical physiotherapy collectively carried out an examination of a few short-term residents in a nursing home. They wrote a report based on their examination and included their ideas on clinical decision making. The students' report was then discussed in a meeting between the students and the nursing home staff.
Summary of results: We will present preliminary analysis of results concerning the feasibility of the project for course organisers, students and nursing home staff, and on the students self-perceived learning outcomes.
Take-home messages: The project probably gave added value for all participants; patients, students, nursing home staff and course organisers.

9Y/13

Effect of Reflective Reasoning on Diagnostic Accuracy in Medical Students: A Cluster-Randomized Controlled Trial

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Background: Reflective or analytical reasoning is one debiasing method. We conducted a cluster-randomized controlled study to determine whether the reflective reasoning process increases medical students' diagnostic accuracy on the objective structured clinical examination (OSCE) using standardized patients.
Summary of work: One hundred forty-five fourth year medical students at Seoul National University College of Medicine (Seoul, South Korea) participated in this study. The students were randomly assigned into reflective reasoning or control groups. Students in the reflective reasoning group received an answer sheet containing a table designed for enhancing reflective reasoning in four cases which required substantial reasoning. Student t-test and Chi-square test were used to compare continuous and categorical variables, respectively.
Summary of results: One hundred forty-five students were randomly assigned to the reflective reasoning group (n=65) or the control group (n=80). Baseline characteristics including grade point average were comparable between groups. OSCE scores were not significantly different between the two groups. Overall diagnostic accuracy was significantly higher in the reflective reasoning group than in the control group (85% vs. 77%; P = 0.018).

Conclusions: In conclusion, this cluster-randomized controlled study demonstrated that reflective reasoning increased diagnostic accuracy on the OSCE using standardized patients among fourth year medical students. It suggests that reflective reasoning may reduce diagnostic error in clinical practice, at least among novice doctors.

9Y/14
A qualitative analysis of a concept mapping exercise to explore the Cognitive Processes of Medical Students in Clinical Reasoning

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Background: To foster students' learning in clinical reasoning, educators need to develop new learning tools that provide an understanding of the underlying cognitive processes of medical students during clinical reasoning. The aim of this study was to perform a qualitative evaluation of a clinical reasoning concept mapping exercise (CRME) as an educational tool to explore medical students' cognitive processes in clinical reasoning.
Summary of work: Study sample consisted of 12 fourth-year medical students from a Midwestern medical school. Students were asked to think aloud while solving two CRMEs and a qualitative approach based on systematic grounded theory was used for analysis.
Summary of results: The CRME demonstrated to be a useful tool to explore, and examine the cognitive processes involved in medical students' clinical reasoning and problem solving tasks. The mapping exercise allowed students to engage in increasingly higher levels of integration of their knowledge structures by meaning making connections.
Conclusions: The study provides educators with a concept mapping technique that can be used as a learning tool to explore interaction of students' knowledge structures.
Take-home messages: CRME can be used to probe into students' clinical reasoning processes with opportunities for feedback.

9Z Posters: Team Based Learning/Case Based Learning

9Z/1
Team Based Learning at Tehran University of Medical Sciences in 2012

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Background: Revising medical curriculums & establishing Reformed Programs results in refined educational methods which are accompanied by development of active & student-based teaching methods such as Team Based Learning (TBL). The purpose of this study is to understand the effect of TBL in cooperative & dynamic learning among medical students.
Summary of work: This responsive & collaborative action research was planned for students of introductory & Respiratory integrated blocks. We did TBL in 15% of Anatomy, biochemistry and physiology classes in 3 phases (reparation, readiness assurance & application). The instruments were observation recording, a valid & reliable questionnaire & small group discussion . 91 students out of 159, were chosen randomly to evaluate the process. This study has outcome validity (problem solving), dialogic validity (collaboration) & process validity (anecdotal record). The questions were analysed by spss 16 software & the results were presented as frequency & percentage.
Summary of results: We observed; the students changed their seats in order to take part in group discussions. They were listening carefully, asking questions and giving reference for approval of their claims. Some were opposed to this method, because it increased the amount of studies. Quantitive outcomes showed that 63/8% of students, have accepted TBL as deep learning approach.
Conclusions: The results indicate that TBL results in cooperative & active learning, and it improves the class activity. We believe this method helps students to identify independent learning.

9Z/2
Development of reasoning ability in team-based learning (TBL)

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Background: TEAM-based learning (TBL) is a learner–centered teaching strategy designed to promote active engagement and deep learning. Our research question is

whether contribution to a team is correlated to the score of the final examination in TBL.

Summary of work: One hundred and one of 5th grade medical students in our university had the first TBL class of general internal medicine. We used a response-analyzer "LENON" (Terada Electric Works Co. Ltd.) which can analyze class member's opinions "face to face" in real time and have a function of "PC Scratch Card". We analyze the relationship between an extent of participation in a group and individual score of the final examination.

Summary of results: The degree of participation and discussion in a group are closely related to individual understanding of clinical reasoning (p<0.01). Score of the final examination is related to understanding of clinical case (p<0.05), but it is not correlated with the proportion of participation and discussion in the team.

Conclusions: Our result indicates the score of the final examination is related to individual understanding of clinical case rather than group activity.

Take-home messages: In addition to participating and working well with others, improving their ability to apply important concepts should be carefully designed in TBL session.

9Z/3
Team-based learning in preclinical cycle. Evaluation of faculty and medical students

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Background: To promote acquisition of transversal competences of students in the preclinical phase of medical curriculum, TBL sessions were implemented. Aim: Evaluate the group interactions and the effectiveness of TBL as perceived by faculty and students.

Summary of work: Seven tutors were trained in TBL; they conducted 10 standardized TBL sessions with groups of 5-7 students (n=65, 54.2% of the class). Interactions were evaluated with Team Performance Survey and peer feedback guide. Interviews of TBL tutors and feedback sessions with students were conducted after each TBL session. Data was analyzed using grounded theory and descriptive statistics, as required.

Summary of results: All learning objectives of the sessions were accomplished. Tutors considered TBL promotes interaction (argumentation and ideas interchange), autonomy and engagement. Students valued the practice of teamwork and usefulness of peer learning. The main suggestion of tutors and students related to time adjustments and minor changes in teaching materials.

Conclusions: Both faculty and students considered that TBL promotes high interaction among students, similar to their future clinical practice. Time is a relevant variable to control in the future.

Take-home messages: Team-based learning in preclinical cycle is an effective teaching method.

9Z/4
Implementing Team-Based Learning: Interactive Small Group Teaching in Anatomy

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Background: By implementing Team-based Learning (TBL) to our curriculum, we are the first introducing TBL in a German medical faculty.

Summary of work: We modified classical TBL in two different ways and compared the outcome in terms of students` examination performance and evaluation. Both modified TBL strategies based on individual readiness assurance tests (iRAT), peer discussions and team assignments (tRAT). A mandatory exam was the primary endpoint of the study presented, followed by an anonymous online-evaluation.

Summary of results: Analyzing TBL performance and examination scores revealed tRAT score as a significant predictor for exam score (case: p=0.00099, jigsaw: p=0.00426). Case groups has proved to be "age-sensitive", whereby older students benefit less from TBL (p=0.00374). Regarding feedback parameters jigsaw students evaluated TBL's benefit for basic understanding in anatomy significantly better (p=0.0335). In case groups nonattendance to TBL sessions was insignificant for exam scores (p=0.4769), whereas in jigsaw nonattendance was a crucial factor (p=0.003658).

Conclusions: The jigsaw strategy turned out to be superior, regarding missing significance of nonattendance in case groups and the students' evaluation highlighting case groups to be less supporting in terms of basic understanding.

Take-home messages: Our results state that jigsaw strategy achieves high students' performance through team-learning, thus it is a viable way to successfully implement TBL.

9Z/5
The challenge of moving forward: from lectures to team based learning

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Background: Guidelines state that medical educators should consider student-centered learning strategies among their teaching methods. The objective of this work is to present a change in the way of delivering classes in a traditional medical school.

Summary of work: Introduction of team based learning (TBL) on Infectious Diseases discipline delivered for Yr4 students. Authors developed a TBL approach for two topics in the program (AIDS and Tuberculosis). There were 3 teachers responsible for lectures, and two of them were trained for TBL. Students evaluated the discipline with structured questionnaire and two open ended questions.

Summary of results: All the 50 students answered the evaluation questionnaire. When asked about their opinion about the different teaching approaches the results for Lectures were: 16% very good; 50% good; 30% regular; 2% bad). For TBL experience: 66% very good; 30% good; 4% regular. The points highlighted were: TBL increase participation and motivation; clinical case discussion helps to understand application of knowledge; appreciated the gifts (chocolate) for the best individuals and teams.

Conclusions: There is no need for profound curriculum changes to incorporate well known strategies which increase students' interests on learning and help them to understand how to apply knowledge in real scenarios.

Take-home messages: TBL is feasible and its acceptance high.

9Z/6
Introducing Team-Based Learning (TBL) at Faculty of Medicine, University 'Goce Delcev' (UGD), Stip, Macedonia

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Zoran Zdravev *(E-Learning Center, University 'Goce Delcev', Stip, Macedonia)*

(Presenter: **Liljana Stevceva**, Faculty of Medicine, University 'Goce Delcev', Dep. of Immunology and Clinical Immunology, Krste Misirkov bb, P. Fax 201, Stip 2000, Macedonia, liljana@hotmail.com)

Background: TBL value in medical education is in promoting individual accountability while developing skills for teamwork.

Summary of work: TBL sessions were introduced since 2010 to medical students at UGD. Two TBL sessions were administered for each of the courses 'Fundamentals in Immunology' and 'Clinical Immunology'. Sessions were conducted in collaboration with the E-learning Center.

Summary of results: TBL sessions were adjusted to 60 minutes sessions. A total of 544 medical students, 487 in Fundamentals of Immunology and 57 in Clinical Immunology underwent the TBL sessions. Students were divided in groups of 5-6 students and were initially administered a short

Readiness Assessment Test followed by case presentations, discussions and teams answers to multiple-choice questions. TBL sessions were not obligatory. Points were awarded for presence and the winning team was awarded extra points. Because of the large number of students, two sets of TBL sessions on the same topic were created and administered.

Conclusions: TBL sessions were very well accepted and enjoyed by the students. Students very much preferred this type of interactive, active learning as opposed to classical lecturing.

Take-home messages: TBL sessions are a valuable teaching tool that can also be administered in medical schools in developing countries.

9Z/7
Team-based Learning in Hematology and Oncology Pediatrics in Udonthani Medical Education Center

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Background: Education methods have changed into Active learning. Team-based learning [TBL] has been developed and used in courses of medical curricula. The objective of TBL is to increase interactivity in classes and teamwork. We studied the satisfaction of the students with this technique.

Summary of work: Eighteen sixth year medical students participated in two topics of Hematology and oncology pediatrics by Team-based learning technique which consists of 3 steps. Firstly, Students study sheets before the class. Secondly, they were tested by a readiness assurance test (IRAT) and divided into 2 groups. They re-examine the test and reach a consensus about each answer (group readiness assurance test [GRAT]). The instructor immediately gives feedback and gives the core concept. Finally, they were tested about the application for patients. Their satisfaction of TBL was done by questionnaire.

Summary of results: The best satisfaction (score of 4 & 5) is presented for TBL learning. Knowledge gain 94%, Skill working with team 83%, Verbal communication 89%, Other team communication 89%, Data support of teacher 100%, Good team work 100%, Time consume 72%.

Conclusions: The 6th year medical students are satisfied with TBL. TBL is a more helpful tool in studying. They prefer using this technique with other topics.

9Z/8
Perception towards TBL

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Background: In 2011, our institution introduced TBL in ophthalmology of Ambulatory medicine for 9 hours for 3 topics. A measure of teamwork is needed to evaluate TBL instructional method and student perceptions of learning teams on TBL.

Summary of work: This study used a quasi-experimental five point Likert scale to measure perception of 28 fifth-year medical students toward TBL between the first and last day of the module. The questionnaire comprising 5 categories (19 items) was used to appraise student perceptions of: overall satisfaction with team experience, team impact on quality of learning, satisfaction with peer evaluation, team impact on clinical reasoning, and professional development.

Summary of results: The instrument had a reliability of 0.92. All means of items on Pre-module were lower than Post-module. Overall satisfaction with team experience, satisfaction in peer evaluation, team impact on quality of learning and team impact on clinical reasoning in post-module had been more improved. No significant change in professional development.

Conclusions: After TBL, students' perceptions of teamwork changed in many topics. This result led to reflection on the usefulness of TBL.

9Z/9
Integrating team based learning in health promotion camp, Maharat Nakhon Ratchasima Hospital Medical Education Center, Thailand

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Background: Team based learning is a fundamental concept for 21st century of medical education. Health promotion camp, a special project, has been done bimonthly in Maharat Nakhon Ratchasima Hospital Medical Education Center since 2004. The study was to appraise the activity.

Summary of work: A descriptive study was conducted. Process evaluations with student rating scale of each camp were collected and analyzed. Afterwards action reviews were done and documented. Qualitative data were appraised.

Summary of results: There have been 46 health promotion camps. The 5th year medical students played leader roles e.g. planning, coordination, and making decisions. Over 90% of participants was satisfied with the activities. Some patients could be detected and appropriately referred to community or provincial hospitals. Medical students valued team-based learning and highly recommend continuing this real experiential learning.

Conclusions: Team based learning experience can be useful for tomorrow doctors working in community hospitals. Continuous health promotion camp will form team leaders in community settings.

Take-home messages: Team based learning should be highlighted in community based medical school via health promotion camp.

9Z/10
Can clinical knowledge be improved in a short period?

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Background: Recent trends in medical education emphasize what a medical student knows rather that what is taught. Most students are competent in clinical knowledge and skills, some fail to meet the standard and require remediation. In this study, we describe and examine the effectiveness of remediation program delivered as TBL (team-based learning) sessions.

Summary of work: After a written examination, 21 students among 4th year students were found to require remediation, and assigned to teams of 4-5 students. Clinical topics dealing with questions in KMLE (Korean Medical License Examination) were taught in the remediation period of 4 weeks and written test on clinical knowledge was done. Changes of test scores were analyzed and student feedback was documented.

Summary of results: Twenty-one fourth-year students participated in the remediation program and all 4th year 150 students underwent the re-examination. Students who participated in the remediation course had significantly improved total scores in the re-examination (remediation group 225.8 to 263.0 vs. control group 290.8 to 304.0, p<0.05). Most students found that the remediation program was instructive and helped them prepare for the examination. Moreover, students gained confidence and all passed graduation examination.

Conclusions: TBL appears to be effective methods in achievement of knowledge objectives for 4th year students.

9Z/11
Bedside teaching by the conventional and the Team-based learning methods: a comparative study

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Background: Bedside teaching is any teaching process with patients regardless of the setting. This study aimed to compare the students' knowledge and opinions of bedside

teaching by the conventional and the team-based learning (TBL) methods.

Summary of work: We conducted a non-randomized experimental study of bedside teaching on 4th year medical students in 2011. Bedside teaching was performed by the conventional and the TBL methods, 4 times with 2 hour periods for each method. At the end, the students were evaluated by examination and questionnaires.

Summary of results: All of the 46 medical students were enrolled. The knowledge from the TBL method was significantly higher than the conventional method. The opinions about the TBL method were very good and better than the conventional method in nearly all items evaluated such as suitability of the learning method, encouragement of analytical thinking and solution findings, knowledge which can be applied for real-situation usage, opportunities for open discussion, and satisfaction towards the learning method. Furthermore, the stress gained from TBL was lower than the conventional method.

Conclusions: Implementation of TBL in bedside teaching may be a better choice for medical students in knowledge application and satisfaction. The limitation of this study is the outcome assessment that does not cover all aspects.

Take-home messages: TBL is a good method of active learning.

9Z/12
An Attempt at a Combined Lecture, PBL and TBL Medical Education Approach -A Four-Week Cardiology Course-

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Background: There are not enough doctors in Japan to serve as tutors for Problem-Based Learning (PBL). This is why PBL has not spread much in Japan. Therefore, we need to change some of PBL sessions to Team-Based Learning (TBL), which can be accomplished with only one teacher. Taking the current situation of Japan's medical education system into consideration, we investigated an attempt at a combined PBL and TBL medical education approach: a four-week cardiology course.

Summary of work: During the four-week lecture-centered cardiology course for 3rd year students, (1) PBL was implemented once a week, for learning about diseases like heart failure, ischemic heart disease, and arrhythmia, and (2) TBL was implemented in order to for them to learn about ECG and cardiac auscultation. At the end of the course, questionnaires were sent to the students to obtain their opinions of the three types of lessons (lecture, PBL + lecture, PBL + TBL + lecture) they liked best.

Summary of results: Students indicated that the lessons deepened their understanding (14.4%, 35.1%, 45.4%), and were easy to remember (20.6%, 29.9%, 45.4%), respectively.

Conclusions: The findings of this paper indicate that a combination of PBL ,TBL and lectures may be the most optimal approach in Japan.

9Z/13
Comparing the efficacy of team based learning strategies in a problem based learning curriculum

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Background: We introduced two variants of team based learning (TBL) strategies in pathology course to seek their efficacy in a problem based learning (PBL) curriculum.

Summary of work: The TBL strategy was adopted in two different sessions. One during regular resource session (RS-TBL) and other during a weekly review session (RVS-TBL) of the PBL curriculum. The study involved 104 second year students during their 8 weeks of cardiovascular-respiratory units and 3 weeks of hematology units. RS-TBL was adopted for cardiovascular-respiratory unit and RVS-TBL for hematology unit. The first 8 weeks of the course were implemented as RS-TBL and the last 3 weeks as RVS-TBL.

Summary of results: The results showed that the group performance was markedly improved than individual performance in both RS-TBL and RVS-TBL (p < 0.001). Comparison between the RS-TBL and RVS-TBL revealed that individual student and group performance was better in the RVS-BL (p < 0.001). The result of the student attitudinal survey indicated an 88% agreement that TBL enhanced their understanding of pathology concepts and critical analysis. Most of the participants (85%) found RVS-TBL to be more useful. Post-TBL, end of semester examination results proved beneficial for the students in risk.

Conclusions: The study demonstrated that RVS-TBL may be preferably adopted to enhance the philosophy of TBL in a PBL curriculum.

Take-home messages: TBL stratigies are positively applicable in PBL based curriculum.

9Z/14
Students' Attitude Toward the Newly Proposed Model of Case Based Learning for Undergraduate Medical Students in Family Medicine Elective Course

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Background: Emerging literature identifies a shift towards students centered learning in a variety of formats such as "problem" and "case" based learning. In Family Medicine Elective Clerkship, Ramathibodi Hospital Medical School, the PBL strategy was used in the new teaching session.

Summary of work: Before the session, the 4th and 5th-year-medical student selected the real case that he saw in practice during the elective period and then created a problem scenario from the case. In the session, the problem was progressively disclosed to his peers. The peers discussed the problem. At the end, the students summarized the learning points as his/her take home messages. The session was evaluated from the feedback of students (verbal and questionnaires).

Summary of results: 23 medical students participated in this new teaching session. The students appreciated it as a good activity and felt comfortable with it. Most of them could develop greater understanding of the cases and could have an opportunity to approach the variety of cases under the collaborative environment.

Conclusions: We had success in establishing Case Based learning in an elective course. Although the sample size is small, most of the students in the course suggested the new session should be used as a teaching method for medical students in the regular course.

Take-home messages: The new teaching model "using a case as a focus of learning" in Family Medicine is applicable and useful for students.

9Z/15
Case seminars open new doors to understanding – nursing students' experiences of learning

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Background: The Case Method is a teaching method in which cases from real life inspire students to actively seek knowledge that they discuss in seminars. During seminars, different solutions and ideas are written in a structured way on the white board. Hofsten (2010) described how case seminars in cardiology help nursing students share knowledge and identify possible ways of dealing with patients.

Summary of work: To deepen the understanding of learning in case seminars, we asked students in a very different educational context, psychiatric care, about their experiences. Written narratives from 44 students were analyzed using content analysis.

Summary of results: The students described the importance of different perspectives and of seeing a context and of

learning in a climate that promotes discussions; they felt that the overview on the white board encouraged students to participate. Different categories and the preliminary themes *To reflect on thoughts, To give and take,* and *To see what is said* are shown in Figure 1. When we presented these results to the students, most reported recognizing our description of learning situation to a great or very great degree; see Figure 2.

Conclusions: The Case Method seems to involve students in a way that deepens their understanding and this effect seems to be independent of subject or teacher.

9AA Posters: Selection and The Student and Resident in Difficulty

9AA/1
Comparison of Assessment Items of the interviews to assess applicants' non-cognitive skills in Domestic and Foreign Medical Schools

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Background: Recently, domestic medical colleges have introduced the interview to assess applicants' non-cognitive skills that is called MMI (Multiple Mini Interview). We compared and analyzed the assessment items on non-cognitive skills, which have been used in the interviews to assess applicants' non-cognitive skills in domestic and foreign medical schools in order to contribute to the development of the interviews to assess applicants' non-cognitive skills.

Summary of work: First, I gathered information from appropriate sources, including the websites of the foreign medical schools, and reviewed literature on admission interview. I compared and analyzed the assessment items on non-cognitive skills.

Summary of results: As a result of the comparison of domestic and foreign data, the assessment items on non-cognitive skills used for student selection most were communication, interpersonal relationships, and honesty.

Conclusions: It was found that communication, interpersonal relationships, and honesty are the factors to identify the characteristic aspect of a good doctor.

Take-home messages: It is necessary to conduct research by tracking and observation on the students selected by the interviews to assess applicants' non-cognitive skills in order to prove the validity of the interviews to assess applicants' non-cognitive skills.

9AA/2
How do medical students select their medical school – a 5 year study in Frankfurt

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Background: In the complex German admission process to medical schools, about 40% of the study places are allocated by a central governmental office, about 60% are allocated by the faculties themselves. Candidates can apply for up to 6 medical schools according to their personal order of preference.
Summary of work: For a period of 5 years, during the inscription process at our medical school, the students (N=2035) filled in a questionnaire in which they were asked about their main reason for choosing a particular medical school as their first preference.
Summary of results: Mainly, the students selected their medical school in close proximity to the residence of their family. The second most common reason for the selection of the faculty was the attractiveness of the university town followed by the reputation of the faculty/university (3. reason) and the way of selecting students (4. reason). The introduction of a selection process matching student abilities with the demands of the faculty caused the translocation of "way of selecting students" from rank 4 to rank 2.
Conclusions: Students select their medical school mainly according to proximity to the family residence.
Take-home messages: Faculties can attract additional students by providing elaborated selection processes.

9AA/3
Admissions Selection for Diverse Populations: The Duke-NUS Experience

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Background: Duke-NUS Graduate Medical School Singapore is a strategic collaboration between Duke University and the National University of Singapore (NUS). We are using a team based learning approach to prepare academic physicians and physician scientists for leadership roles in medical research, education, and patient care.
Summary of work: Five classes have been admitted and a sixth intake is underway. Students come from 22 countries and 5 continents, including Europe, Africa, North America, Australia, and Asia after completing undergraduate or advanced degrees. Our students are alumni of many schools including Duke, NUS, Harvard, Johns Hopkins, Oxford, Cambridge, and Imperial College.
Summary of results: The Admissions Team has faced substantial challenges selecting students from such diverse cultural and academic backgrounds. Our approach combines traditional psychometric methods with a holistic rating approach of key dimensions including humanism, professionalism, and empathy. We have been implementing assessment ideas advocated by a number of presenters at the 15th Ottawa Conference, including Plenary Speaker Brian Hodges.
Conclusions: Performance of Duke-NUS students on a number of measures, including the USMLEs, IFOM, the Jefferson Scale of Physician Empathy, longitudinal workplace assessments, and OSCEs suggests that this admissions process is producing cohorts who are performing well above US medical school and European medical school averages.

9AA/4
Applying for your first job: the weighting game

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Background: Applications for first medical jobs are centralised by the UKFPO, who use academic rankings to match applicants to jobs. There is no standardised method for calculating rankings. Sheffield Medical School previously equally weighted four summative assessments (Year 1 – Year 4). This system was reviewed using student opinion.
Summary of work: Staff and student representatives produced two options for consideration:
Option 1: All 4 years' results counted 25% of total;
Option 2: First and second years counted 15%, third year 40% and fourth year 30% of total;
Students voted by paper ballot, email or an electronic audience response system.
Summary of results: Students favoured Option 1 (57.66%). The breakdown of votes showed that all but one year voted for Option 1.
Conclusions: Although unpopular, class rankings are an important aspect of the UKFPO. Equal weighting of exams was favoured over differential weighting. This is closer to the Grade Point Average (GPA) system widely used in North America than to weightings for honours degree classifications that UK universities currently use outside Medicine.
Take-home messages: Students' opinions on this high stakes selection process differs according to their year in course, and did not necessarily reflect personal advantage

9AA/5
Communication Skills - A predictor or confounder of 360 degree assessment?

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Background: Selection for foundation training is based upon a competitive assessment of responses, MTAS. White space responses to a set of questions mapped to the GMC's guide to good medical practice. There has been much criticism of this assessment and allocation process and its lack of relevance to work based assessments undertaken in foundation year(FY1). Medical School final year examinations use a number of different elements e.g. communication skills, which have much in common with FY1 assessments. A selection process based upon assessment that predicted success at FY1 would be perceived to be a fairer and more relevant process however the relative predictive value of each modality of assessment remains unknown.
Summary of work: This study explored the relationship between the constituent modalities of MTAS scores, final examination (Part 6) scores and Foundation Year 1 Assessment scores and attempted to identify their predictive or confounding influence.
Summary of results: Analysis of 186 medical students from Barts and The London School of Medicine and Dentistry allocated to the North East Thames Foundation School. Using Stata software linear regression to plot the relationships between the different results and modalities of assessment, indicative of their statistical significance and predictive value.
Conclusions: This study identifies the importance of communication skills as a predictor of future performance or a confounder of assessment. It also identifies the importance of the context in which this assessment takes place as a factor in its effectiveness in this capacity.

9AA/6
Applying to medical school – an informed decision?

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Background: Applicants to UK medical schools choose between different admissions processes, teaching styles and lifestyles. This study aimed to investigate current students' retrospective opinion of the various admission processes, and factors that influenced which medical schools they applied to.
Summary of work: Focus groups were undertaken with current medical students at one medical school. Following a review of the literature a structured interview guide was developed. The discussions were recorded, transcribed and subjected to thematic analysis.
Summary of results: Three main themes regarding the selections process arose; students are aware of components of the admission process but are unsure of how these were used in the overall selection process, inconsistencies between prospectus information and current student advice, and application decisions were influenced by rumours. Subjects

identified two main criteria for choosing medical schools; the city/campus environment, and avoiding PBL courses. Discussion on interview types identified strengths and weaknesses in all interview formats, but students were most positive towards non-academic interviews using personal statements with the addition of communication scenarios.
Conclusions: Applying to medical school, for a number of people, does not seem to be an informed decision.
Take-home messages: Medical schools need to be aware of what information applicants seek as well as need for an informed career decision.

9AA/7
What factors influence students' choice of medical school?

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Background: Little is known about how aspiring medical students choose a medical school. In this study we compare the reasons for the selections made by medical students at two UK medical schools.
Summary of work: Students at a medical school in London and one in South-West England completed a structured online questionnaire covering demographic information and medical school choices. Selected respondents also participated in structured interviews. Numerical data were analysed statistically, significance being $p<0.05$. Both institutions gave ethical approval.
Summary of results: Eighty-six individuals (38% male, 62% white British) responded. Significantly more London (78%) than South-West (46%) respondents were from an affluent background (determined by Office for National Statistics classification of parental postcode). City location and course structure were significant factors in London respondents' selection, whilst the coastal location, cost of living and course structure were significant to South-West respondents. Institutional prestige was interpreted as league table ranking by London respondents, whilst South-West respondents identified modernity and a strong clinically-based curriculum as prestigious.
Conclusions: Both groups cited geography and course structure as major factors in their medical school selection, although the courses differ substantially in ethos, structure, context and mode of delivery.
Take-home messages: Diversity of medical school provision may contribute to diversity in student, and ultimately, medical graduate, populations.

9AA/8
Enneagram can help to deal with medical students in difficulty

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Background: In clinical years medical students always have many problems such as stress, coping style and interpersonal relationship problems that affect learning ability. Early detection and early intervention must help them to deal with it and regain a normal life. Enneagram is a tool of self understanding and one of the methodsto reduce interpersonal relationship problems.

Summary of work: This study collected data from eighty-eight 4th and 5th yeara medical students who attended a three-day enneagram workshop and thirty-two 6th year medical students who did not attend this workshop. One year after, data were collected by self evaluation questionnaire, interview and self reflection.

Summary of results: Twenty (46.51%) 4th year medical students and fifteen (33.33%) 5th year medical students year 2011 reported their problems. Only two (6.25%) 6th year medical students reported their problems. Early intervention must be done.

Conclusions: Enneagram is the one method used to find out and communicate to staff that medical students need help and facilitate early intervention.

Take-home messages: Enneagram is a useful method and should be encouraged in extracurricular activities.

9AA/9
Medical student experiences of academic and pastoral support - striving for excellence?

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Background: This project evaluated student perceptions of academic and pastoral support at this medical school in order to improve student experiences. The National Student Survey (NSS) is a national survey for all final year undergraduate students of publicly funded UK Universities to provide feedback on their courses.

Summary of work: The methods included analysis of NSS open comment data from 2006-11, and focus groups with current students. Focus groups for each year group for Years 1, 2, 3 and 4 were audio-recorded and transcribed for analysis. Focus group questions elicited student values and concerns regarding the support available to them. The data was coded and analysed using NVivo software and Framework Analysis.

Summary of results: Concerns were voiced by the students who perceived support to only be available to those struggling, and desired wider availability of guidance for more able students to enable them to strive for excellence.

Students were also uncertain about how to access existing support services.

Conclusions: The project highlighted the importance of providing academic support to students of all academic abilities, as well as ensuring that pastoral support is easily accessible.

9AA/10
Gender matters in mentor selection of medical students: A descriptive study

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Background: Different gender issues are of interest with respect to institutional mentoring programs (Chandler & Ellis, 2011). The Medical University of Vienna introduced a mentoring program to support medical students' professional and personal development.

Summary of work: 117 mentors and 410 students participated in the program. Mentees chose their mentor according to online published profiles. Gender distribution of mentors/mentees, and possible gender-related selection trends were analysed in this descriptive study.

Summary of results: Among the faculty members declaring willingness to act as mentors, 29.9% were female, a significant under-representation of the total scientific staff. However, a significant female over-representation was seen with the mentees (53.2%; $\chi2=11.06$; $p<.05$). In 63.7% female mentors were chosen by female mentees. In contrast, male mentors were almost equally chosen by female and male mentees, demonstrating significant differential selection patterns ($\chi2 =6.97$; $p=.008$, $\phi korr= 0.39$).

Conclusions: Without taking into account other variables (e.g. mentor's specialty), gender seems to have an impact on the willingness to be a mentor/mentee as well as on selection of mentors.

Take-home messages: The importance of mentors for career advancement of medical students should also be discussed in light of gender effects.

9AA/11
Attendance Tracking in Undergraduate Medical Education as a Tool to Identify At-Risk Students

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Background: Medical students are subject to a variety of stresses that can undermine their performance and participation in medical school. Question: can attendance tracking be used to identify students who are experiencing major disruptions to their studies (personal, medical, mental health, behavioral, etc.)?

Summary of work: First year students were made aware of the Attendance Policy/Procedures. Specific sessions within the curriculum were designated "monitored" (distributed uniformly within curriculum). Students were expected to report missed sessions, and attendance in monitored sessions was recorded by staff/Faculty. Attendance data was compared retrospectively to student records.

Summary of results: The attendance of 170 students was tracked over 18 months. 965 session absences were recorded (mean = 5.7; range 0 – 43; prevalence = 0.12). There was a moderate correlation between number of missed sessions and presence of major disruptions to medical studies ($r = 0.63$). Fifty-one students missed greater than 7 sessions. Of these, 21 were found to be experiencing majority difficulties. Of the 119 with < 7 absences, none were experiencing difficulties (sensitivity 100%; specificity 80%; ppv = 41%; npv = 100%). Sensitivity decreased while specificity increased as the cut point was raised above 7.

Conclusions: These results suggest that absenteeism is associated with major disruptions to medical studies. Absence tracking performed well as a "test" for major study disruptions.

Take-home messages: Medical school demands a high level of participation and performance from learners. The systematic tracking of absenteeism offers a potential mechanism to identify at-risk students in need of support.

9AA/12
Implementation of a Mentorship Programme in the final year of studies in the medical school / University in Jena

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Background: The medical faculty of the University in Jena wants to improve its final practical year of studies with a mentorship programme.

Summary of work: In 2012 five clinics will implement the mentorship programme and thereafter nine per year. The mentor will be a permanent personal contact partner to ensure consistent training. Simultaneously study guides will be worked out to give organizational hints / assist in the learning process. A separate logbook will document new developed skills. Some primarily formative assessments will be introduced: The Mini Clinical Evaluation Exercise, the 360° Feedback and a partially structured portfolio. Results will be discussed with the mentor. To establish the programme specific trainings will be offered.

Summary of results: An evaluation will provide evidence about the success in future.

Conclusions: To succeed with the Mentorship Programme discussion and feedback is welcome to learn from other experiences.
Even though new Programmes aim to do things right from the start, feedback loops need to be established to ensure a high quality programme.

Take-home messages: New programmes need adaptations for quality assurance.

9AA/13
Establishing and maintaining communities of practice in a large medical school

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Background: In large medical schools it can be difficult to maintain a sense of belonging, community and continuity.

Summary of work: This project creates a vertical structure and process for students and tutors to make the big seem smaller within a 'community of learners'. The focus of practice is around academic and pastoral support along with a peer assisted study scheme. Scope for sports & social activity and social responsibility activities is anticipated.

Summary of results: Analysis of student feedback, consultations with students, tutors and administrators identified feelings of isolation, lack of continuity and inconsistent peer networks, acutely felt in periods of transition. This has significant impact on students' satisfaction and their ability to access academic and pastoral support. Earlier recognition and intervention in both academic and pastoral issues is facilitated.

Conclusions: A medical school can become too big for a 'community of practice' to be established or maintained. Development of the 'community of learners' structure in this medical school aims to address these important issues.

Take-home messages: Consistent social and academic networks appear to be important for satisfaction, academic achievement and pastoral support. Further work is required to evaluate how this structure might enhance students' experience and performance.

9AA/14
Medical Students with Dyslexia: Developing Coping Strategies for Dealing with the Demands of Clinical Practice

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Background: Since 2004, around 7% of students taking Graduate-Entry medicine in Swansea, a course with early clinical exposure, experience dyslexia. Whilst some students have well-developed coping strategies for academic study, few have experience of techniques that could help in clinical practice.
Summary of work: The initiative aimed to design procedures to enable students with dyslexia to develop coping strategies for clinical practice. Identified students were encouraged to utilise the campus one-to-one dyslexia tuition service and were allocated local clinical placements to enable their weekly campus-based sessions to continue. Thus, whilst on placement, they were able to identify dyslexia-related difficulties, work through them with their tutor and practise techniques for coping with their dyslexia in clinical practice.
Summary of results: With time and practice, students learned effective coping strategies to support their developing clinical practice e.g. concept mapping when taking histories.
Conclusions: Whilst it is not yet possible to analyse the effect this innovation has on performance in clinical assessments, the process has had positive effects on students' confidence when dealing with patients.
Take-home messages: Students with dyslexia benefit from extra support whilst on placement. They can be taught strategies to help cope with the demands of clinical practice that will aid them throughout their future careers.

9AA/15
Evidence-based selection of international medical graduates to residency programs: What selection information best predicts success at college certification exams?

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Sharon Cameron (*Postgraduate Medical Education Program, Faculty of Health Science, McMaster University, Canada*)
Geoff Norman (*Program for Educational Research and Development, Faculty of Health Science, McMaster University, Canada*)
<u>Lawrence Grierson</u> (*Department of Family Medicine / Program for Educational Research and Development, Faculty of Health Science, McMaster University, Canada*)

(*Presenter:* Lawrence Grierson, Department of Family Medicine / Program for Educational Research and Development, Faculty of Health Science, McMaster University, Canada)

Background: Due to a shortage of physicians, more international medical graduates (IMG) than ever before are being admitted to Canadian residency programs. Unfortunately, the rates of failure on college certification exams as well as the need for in-residency remediation are significantly higher for IMGs than for their Canadian medical school graduate counterparts. The present project reports the information that is available to residency programs at the time of the CaRMS selection that best predicts IMG success at the college certification exams. In order to generate this report we reviewed the CaRMs files of IMGs that completed McMaster University residency programs between 2005 and 2011 and correlated the information contained in the files with certification exam outcomes via regression analyses. The results of this work provide the foundation for the development of tools that may assist with the selection and education of the IMG residency candidates.

9BB Posters: Students

9BB/1
Developing resilience in medical students

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Background: The MBBS programme places particular demands and pressures upon students, which continue into their professional life. Few studies have investigated the role of resilience as a professional attribute for coping constructively with the stressful demands of a medical career. Many senior doctors and educationalists argue that resilience is modifiable through training. Previous work has shown that students believe they're already resilient. The current study looks to further this work by looking at whether student perception of their resilience is matched by an independent assessment of their resilience.
Summary of work: Questionnaires, focus groups and semi-structured interviews with staff, students and doctors to assess the perception and reality of resilience, i.e. the ability to respond positively when faced with adversity. Hence the need for resilience training to be incorporated into the MBBS programme. Thematic qualitative analysis will be used.
Summary of results: Analysis reveals key themes surrounding student and staff perceptions of resilience

including what resilience is, why it's important and if there is a need for training.

Conclusions: Resilient students and doctors will be better equipped to cope with the challenges of medicine.

Take-home messages: Resilience is a key professional attribute that can be taught providing lasting benefits for tomorrow's doctors. The form of this training will be discussed.

9BB/2
Medical Student Personalities: A Recipe for Psychopathology

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Background: Much is written about medical student response to pressures experienced in medical school. The prevailing assumption is the "pressure cooker" environment of medical school results in psychological distress. This conclusion supports a particular menu of student needs to avoid / accommodate the induced distress.

Summary of work: Our work is a review of existing literature regarding the psychological make-up of medical students, with particular attention on prevalence of obsessive-compulsive personality traits. We compare the "environment of medical school" perspective that alleges pressures, demands, and atmosphere of medical school result in psychological distress versus our hypothesis that pre-existing personality traits predispose this group to psychological distress, up to and including emergent psychopathology when subjected to the medical school "pressure cooker".

Summary of results: We will assess our hypothesis that contrary to frequently promoted theories that the environment of medical school leads to student psychopathology, students entering medical school are not identical to their age-matched peers and already possess personality traits predisposing them to psychopathology.

Conclusions: The needs / requirements of a medical student with a pre-existing psychological structure may be different and different school resources / support may be required.

Take-home messages: Further research is needed to identify / understand gaps in perspectives on medical student psychologic structure and psychopathology.

9BB/3
The impact of extracurricular activities in the formation and professional profile of the Brazilian medical student: a case study

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Background: In 2001 Brazil institutionalized mandatory national academic guidelines (Diretrizes Curriculares Nacionais – "DCN") for all medical schools. The DCN strive to form a generalist doctor, engaged in community work and public service. Beyond the DCN's mandatory activities, 95% of medical students dedicate 6 hours weekly to extracurricular activities. Such activities, which influence their professional profile, may reinforce the goals of the DCN or not.

Summary of work: Questionnaire applied to the 660 students (in all six grades) of Faculdade de Medicina de Petropolis aiming to indentify their most popular extracurricular activities. 51% of students participated and distribution across grades was balanced.

Summary of results: During the first two grades, most popular extracurricular activities were non-medical. From third grade, medical related activities became dominant. There was overall little engagement with community work.

Conclusions: Responses revealed students' desire and preparation to become a specialized doctor, as such are the demands of the labor market at large. This reality counters the goals and objectives of the DCN.

Take-home messages: Labor market forces are determinant of students' preparation and formation efforts. The effectiveness of educational guidelines depends on their agreement with such dynamics. Meanwhile, the student opts for extracurricular activities that stray from the profile designed by the DCN.

9BB/4
The comparison of Medical students' health and behavior between Chiang Mai University and other medical universities

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Background: Medical students have a high prevalence of stress, inappropriate health behaviors. In order to design health promotion programs for medical students, it is necessary for Student Affair Network to set a database of health medical students in Thailand.

Summary of work: This survey research was carried out in 7,600 medical students from 17 Universities in Academic Year 2010. A self-health status and behavior survey questionnaire was used as a measurement. The questionnaire consisted of three parts 1) Demographic data of population characteristics 2) Thai General Health Questionnaire (TGHQ) consists of 12 items and suicidal ideation 3) Health behaviors.

Summary of results: A total number of 7,600 from 12,950 medical students completely answered the questionnaire (58.7%). There was no significant difference of body weight, height, body mass index and waist circumference between Chiang Mai medical students and the rest of medical

students. Chiang Mai medical students had better health behaviors in sleeping (6.44 hours vs. 6.32 hours), no alcohol consumption (37.6% vs. 29.7%), no smoking (96.8% vs. 94.3%) and regular exercise (32.2% vs. 23.9%) as compared to other medical students. Besides, the nationwide medical students (35%) showed higher stress as compared to Chiang Mai medical students (27.4%).

Conclusions: Faculty staff can use this database to design and develop health promotion programs.

9BB/5
Use of Adult Trait Hope Scale in a Medical School Setting

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Background: Assess the role of the Adult Trait Hope Scale (ATHS; Snyder, 1991) in academic performance in a medical school setting. ATHS was used to measure "the process of thinking about one's goals, along with the motivation to move towards those goals (agency), and the ways to achieve those goals (pathways)" (Snyder, 1995). Higher ATHS scores indicate increased agency and pathways.

Summary of work: ATHS scores were measured at the start of the semester with possible scores ranging from 12-64. In this study, subjects were grouped into high (n=18, mean=57.3) or low (n=18, mean=44.6) scores, and then correlated with cumulative semester GPA.

Summary of results: ATHS scores ranged from 35-61. At time of submission, cumulative semester GPA scores ranged from 55-89. Subjects with high ATHS scores (mean=77.32) had significantly higher cumulative semester GPA scores (p<0.05) than those in the low group (mean=70.89).

Conclusions: These results support previous studies done in undergraduate students (Snyder, 2002) and suggest the ATHS may be correlated with academic performance. Identifying vulnerable students and offering possible interventions early in medical education may help reduce attrition rates and increase student satisfaction.

Take-home messages: Scores on the Adult Trait Hope Scale are positively correlated with academic performance in a medical school setting.

9BB/6
A study of value priorities, self-esteem and self-efficacy of premedical students

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Background: Since values are conceived as guiding principles in life, the understanding of the values is especially important. The aim of this study was to determine what values predominate in premedical students and to evaluate the relation among these values, self-esteem and self-efficacy.

Summary of work: 61 premedical students filled out questionnaires assessing their life value priorities, self-esteem and self-efficacy. We investigated the change of life values by priorities. To evaluate the relation among these values, self-esteem and self-efficacy, we first classified these values using Rokeach's terminal and instrumental values and evaluated the relation.

Summary of results: Analyzing predominant values in total, the main values in life were money and relationships with other people, but happiness was the best important thing in first priority, while value of purpose was seen as rather insignificant. Our study showed a statistically significant positive relationship between self-esteem and self-efficacy, but there was not the relation of the classified values with self-esteem and self-efficacy by terminal and instrumental values.

Conclusions: Premedical students regard material and human resources as important. Although the value of purpose is important for medical students, the value of purpose was seen as rather insignificant in this study. We found it is significant to raise self-esteem and self-efficacy at a time, detecting the positive relationship between self-esteem and self-efficacy.

Take-home messages: Since a sense of purpose fuels students' motivation, it is desirable to provide more education with the value of purpose for medical students from freshman.

9BB/7
A comparison between emotional intelligence and academic performance of the first year medical students in Tehran University of Medical Sciences(TUMS)

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Background: There has always been a doubt about the probable connection between the emotional intelligence and the academic performance of different students. Medical students' academic performance, due to their field of study, the time they have to spend studying and the difficulty of their lessons may be affected more by emotional intelligence.

Summary of work: 126 first year students in TUMS participated in a paper-based emotional intelligence assessment (Bar-On test) before starting their career in medical school. The results of this test were next compared to the students' scores and rankings in their first two exams in the university and also, their previous national university entrance exam (held before entering the university).

Summary of results: The scores of the second exam of the first year medical students in TUMS, indicated above, have not been reported by the time of this submission, and the final results will be obtained and analyzed in near future.

Conclusions: If it proves that emotional intelligence can affect the academic performance of the first year medical students, specially in an integrated curriculum which is completely new to TUMS, then it is worth trying to improve the students' emotional intelligence which may lead to their reduced stress, better academic performance and learning effectiveness.

Take-home messages: Let's take EI a bit more seriously!

9BB/8
Psychological profile evaluation of a population of medical students using TMMS-24 and CAS tests

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Background: The emotional state of the student plays an important role when facing the challenges of their education. For this reason it is important to know the student's psychological profile which allows us to know their emotional problems that could interfere with their academic development. The objective of this work was to analyze the psychological profile of medical students.

Summary of work: The study was conducted with 545 students in first year of medical school, mean age of 17.5 years. To evaluate the psychological profile we used two tests: Trait Meta Mood Scale 24 and the College Adjustment Scale.

Summary of results: There was a relationship between greater attention to self-emotional problems with a higher tendency towards anxiety and low self-esteem. While in the emotional clarity and repare scale we found that when these were higher, the student was less likely to present problems and had a higher ability to solve them.

Conclusions: These results allow us to take into account that it is necessary to promote the development of emotional intelligence in the academic environment as a way to reduce the psychological problems of the student and to develop skills which will allow them academic and professional success.

Take-home messages: Emotional intelligence is important in the academic environment.

9BB/9
Identification of predictors underlying the attitude of medical students towards Biochemistry at Ross University School of Medicine and their influence on learning outcome

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Background: The importance of positive attitude in the learning process of students has been acknowledged in numerous educational studies. The frequently observed negative attitude of medical students towards Biochemistry at Ross motivated this study.

Summary of work: The present study thus aims at identifying predictors underlying the attitude of 150 medical students (1st/2nd /3rd semesters at Ross University School of Medicine, Dominica) towards Biochemistry and explores the relationship between the possible predictors, attitude and learning outcome of the students. Personal details and ratings of the attitude/confidence levels (on a scale of 1-7) were provided by students in a questionnaire distributed at the beginning of the semester. The MCAT scores and GPAs of participants were obtained from the University database. Correlation and multiple regression models were used for data analysis.

Summary of results: Preliminary results indicated that students' attitude was positively correlated with their level of confidence for Biochemistry. Multiple regression analysis identified confidence and age (marginally) as predictors of attitude. MCAT (bio) scores and familiarity with Biochemistry were the best predictors of students' confidence levels.

Conclusions: Learning outcome was not influenced by students' attitude towards Biochemistry or its predictors but by gender and first language.

9BB/10
Lifestyle, habit of studying and academic performance in medical students

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Background: Different variables influence mental health, learning process and academic performance of students.

There is no consensus about the most vulnerable moment during the study, and the gender differences.

Summary of work: We correlate findings of aspects of lifestyle and study with academic performance and other variables. Students of the first 5 years of the Medical School of Universidad de los Andes, were evaluated using a self designed survey including sociodemographic, academic, personal and logistic aspects and two stress scales (IEA, EGPE).

Summary of results: 353 students were evaluated, 54,4% were female. 32,1% of the students slept less than 5 hours during the working days, worse in the higher levels of the career. 45,3% studied more than 6 hours daily, and even more during weekends. 48,6% made sport regularly, 44,9% declared to spend less than 5 hours per week in recreation and 45,1% had a couple of students with higher stress rates and few sleeping time had better self perception of academic performance. Students with higher stress rates and little sleeping time had better self-perception of academic performance.

Conclusions: Medical students seemed not to lead a healthy lifestyle.

Take-home messages: Medical education should consider the students´ welfare.

9BB/11
Patients' Perception and Attitudes Toward Medical Students Participating in Obstetric and Gynaecologic Outpatient Service in Thailand

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Background: Student involvement in obstetric and gynaecologic care has been a sensitive issue in medical education, particularly in Asian culture. Little evidence exists to document patients' perception and attitudes toward students participating in obstetric and gynaecologic care in Thailand.

Summary of work: 155 women attending an obstetric and gynaecologic outpatient clinic of Sanpasitthipasong Hospital were questioned about their perception and attitudes toward student participation in patient care, using self-administered questionnaire. The proportions of patients having good levels of perception and attitudes were summarized as percentages, and factors associated with good perception and attitudes were examined using logistic regression.

Summary of results: The majority of patients showed good levels of perception and attitudes towards student participation in patient care (78.1% and 81.3% respectively). Factors associated with good attitudes included age and being married, while no specific factors were related with good perception. Fourteen women (9.0%) indicated that they preferred students not to be involved in their future care, mainly due to privacy issue and student incapability.

Conclusions: Most women attending obstetric and gynaecologic outpatient care had good perception and attitudes toward student participation in their care. Issues of patient's privacy and perception of student capability should be addressed.

9BB/12
Effect of Knowledge Management on Recent Conversion Rates of Tuberculosis Infection in Medical students

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Background: The first year of clinical training exposes fourth-year medical students (MS) to the risk of tuberculosis infection (TB) in hospital environment. Objective: To compare recent conversion rates of TB in MS between the groups who participated and did not participate in KM of TB in work place.

Summary of work: A survey research was conducted for two years in 32 fourth year MS each year using Mantoux tuberculin skin test. A recent convertor was defined as a person who had indurations changed from negative to positive results. MS were divided into two groups: group one - those who did not participate in KM and group two - those who participated in KM in the first clinical year. The recent convertor rates were compared.

Summary of results: Tuberculin test showed positive results in 56.25% in group one, and 71.87% in group two. After one year, the recent converter rate were lower in group two (11.11%) when compared to that of group one (57.14%) (p =0.027). In group one, after passing KM training, the recent convertor rates decreased from 57.14% after the first year to 33.33% after the second year (p =0.329).

Conclusions: KM guided MS to prevent themselves from TB infection while working in hospital environment.

Take-home messages: Medical Education Center ought to perform KM and continue to practice the guidelines to prevent tuberculosis infection in MS every year.

9BB/13
Factors affecting professional self-confidence in Nursing Students

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Background: Professional self-confidence refers to belief in one's personal worth and likelihood of succeeding in profession. Professional self-confidence is affected by interpersonal communication in clinical environment. In this research we aimed to describe the nursing students'

viewpoint regarding factors affecting professional self-confidence.

Summary of work: An exploratory qualitative approach utilizing grounded theory methods was used. Purposeful sampling maximizes information rich description about context. Focus group interviews were undertaken with 26 fourth year nursing students in 4 sessions. All interviews were taperecorded and data were analyzed using constant comparative analysis. Informed consent was taken from participants before data gathering.

Summary of results: Three main themes emerged from the data: interpersonal relationship, independence for practice, incompetence in knowledge and skills.

Conclusions: Analysis of the data indicated that students do not have complete professional self-confidence. The findings of this study support the need to reform aspects of the curriculum in Iran in order to increase the sense of competence in knowledge and skills in nursing students and having independence for practice. More attention is needed to enhance positive interpersonal relationships between students, instructors and staff.

Take-home messages: We should try to enhance self-confidence in nursing students.

9BB/14
Grade point average of third Year medical students of Ross University as an indicator of participation in optional Emergency Room rotations

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Background: The Advanced Introduction to Clinical Medicine department offers a 10 week clinical exposure in the inpatient setting to third year medical students. In addition to structured clinical exposures, optional Emergency Room rotations are offered. This study examines the relationship between students' Grade point average and participation in Emergency Room rotations.

Summary of work: The incoming GPAs of 80 students were reviewed to determine if there was a relationship between taking advantage of Optional ER rotations and GPA. The GPA of students who signed up for the rotations as well as students as who did not was evaluated. We also reviewed the students' end of semester GPA to assess for consistency in performance.

Summary of results: Higher performing students with higher GPAS were more likely to have opted to do ER rotations, than those students who did not. The latter were more likely to have lower GPAs.

Conclusions: Higher performing students are more likely to take advantage of added learning opportunities in the Emergency room enhancing their clinical skills. GPA and participation were also good predictors of their overall performance.

Take-home messages: Incentives need to be offered to lower performing students to take advantage of good quality learning opportunities in order to enhance clinical competency and performance.

9BB/15
Global student affairs experiences: leading a diverse Student Affairs Division at one medical school in a developing country

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Background: Presentation will discuss utilization of a classic student affairs document Principles of Good Practice for Student Affairs (American College Personnel Association, 1996) to enhance the effectiveness and efficiency of a student affairs team with one goal – student success.

Summary of work: All-staff retreats (three) were conducted to share some of the basic premises, and principles to increase student affairs competencies and skills in all staff members. Inventories, designed to correspond with each principle, were utilized as a pre/post measurement of providing quality services to students and promoting student learning. April 2011 25 staff completed the pre-test.

Summary of results: Will be presented at time of the conference; final data will be available April 30, 2012.

Take-home messages: These principles provide a framework for implementing a high quality learning environment and learning experiences for staff and students; and a process to shape how we think about our responsibilities, communicate our purposes to others, and engage students. The principles should create a continual context for examining and implementing student affairs missions, policies, and programs providing both a guide for assessing the contribution of student affairs to student learning outcomes and a curriculum for ongoing staff development.

9CC e-Posters: OSCE and Standard Setting

9CC/1
The acceptability of using video capture in Objective Structured Clinical Examination

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Background: The role of the OSCE station assessor has come under scrutiny. The innovative use of video-capture may provide a solution to some of these limitations. In this approach the candidate has their performance captured on video, allowing for an assessor to remotely score the candidate. This method has yet to be explored in full however, the use of videotaped OSCE (VOSCE) has been reported in shoulder and knee examination.

Summary of work: In this study we examined the acceptability of VOSCE. A semi-structured questionnaire was used to sample medical students and faculty assessors.

Summary of results: The results show a majority of those student respondents find OSCE assessments preparatory for on-going clinical learning. Most students found the presence of an assessor does impact on their performance. When questioned about using video in the OSCE format the majority had no concerns about this but did not favour replacing assessors with video alone. Among the faculty respondents there was triangulation of the student responses on the themes of video use and the technical challenges involved.

Conclusions: We plan to proceed by examining the reproducibility of the VOSCE format through a study of inter-rater reliability in summative assessment.

Take-home messages: Stakeholder agreement is essential in the evolution of clinical skills assessment.

9CC/2
Raters' opinions of the first national pilot OSCE in Taiwan

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Background: Starting from 2013, Taiwanese medical graduates must pass the National Objective Structured Clinical Examination (OSCE) before taking the National Medical Licensure Examination Step II.

Summary of work: In 2011, a 12-station pilot OSCE was simultaneously administered in eleven medical schools. The National OSCE Committee developed the examination format and content, held training workshops, oversaw the examination process, and set passing standards. Each school recruited its standardized patients (SPs) and internal raters. Student participation wasn't mandatory. To pass the examination, a student must achieve the minimum total score and pass at least nine stations.

Summary of results: 111 final year medical students took the examination in KMU and all passed. Raters were asked to fill out feedback questionnaires about their opinions on the examination and SPs' performance. Raters agreed that the examination venue was well set-up, examination ran smoothly, the test content and difficulty were appropriate, SPs followed instructions and played the patient role during the examination. Raters pointed out the problems they observed, and gave suggestions on case instructions, checklist items and rating standards.

Conclusions: The National pilot OSCE was successfully administered. However, the cases needed to be refined and SPs needed more training.

Take-home messages: Extensive preparation is needed to implement a national OSCE.

9CC/3
An Objective Structured Clinical Examination (OSCE) including critical simulation: an evaluation for medical student competence

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Background: Aim: To develop an OSCE station to assess medical students' critical condition evaluation skills in the application of evidence and appropriate treatment options with a simulated patient. Assessment of the result using discrimination and reliability comparison of the standardized and simulated patients stations.

Summary of work: Study Methods: OSCE performance scores of 58 seventh year medical students on 10-11 April 2010 at the University of Tzu-Chi School of Medicine were analyzed using descriptive statistics and item discrimination. Through a consensus process, 13 OSCE cases were identified for evaluation.

Summary of results: The discrimination statistics indicate that the only critical scenario station prepared with high-fidelity simulator was effective in distinguishing between medical students.

Conclusions: Failure to design the skill assessment tool is a missed opportunity to more fully understand and apply the results of such result to the clinical performance of medical students.

Take-home messages: The OSCE is an important tool for clinical competence evaluation that will soon grant access to the national medical practitioner license test for medical students in the world. How to elevate the quality of the OSCE

and assess students' ability such as actual management of the patient with an emergency condition is currently a critical issue.

9CC/4
Validity of using COPM for OSCE in occupational therapy education

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Background: There is no report about Canadian Occupational Performance Measure(COPM) in OSCE for occupational therapy students in Japan.
Summary of work: This study was designed to check OSCE scores and difficulty levels of tasks between task with COPM and without COPM. Participants were 46 third grade OT students before clinical practices, and they were randomly assigned to the same size of two groups. Two intake interviews were set for each different type of simulated cancer patient. OSCE scores were graded according to their performance and difficulty levels of tasks were measured by visual analogue scale. For statistical analysis, we used Wilcoxon test and Mann-Whitney test.
Summary of results: No significant difference about OSCE scores were obtained among two tasks and between task with COPM and without COPM. Participants showed no significant difference about difficulty levels among two tasks. In intratask, OSCE scores about the task with COPM were significantly lower than those without COPM. But difficulty level of the task without COPM was significantly higher than those with COPM.
Conclusions: It is useful for beginners to use COPM at intake interview as a kind of guideline, but for skilled practice of using COPM, it is necessary to exercise enough.

9CC/5
The validity of OSCE (Objective Structured Clinical Examination) and lecture for occupational therapy clinical training - Positive efforts of OSCE and basic medicine

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Background: We investigated what kind of classes including OSCE leads to success in OT clinical training.
Summary of work: Subjects were 172 university students completed 3rd of 4 grades. School classes (SCs) were divided into general, basic medicine, OT specialized, OT assessment methodology, and OT therapeutics. OSCE were on clinical skills of basic, observation, and interpretation. Scores of clinical training (SOCT) were on general instructional objects (GIOs) of 1 plan, 2 evaluation implementation, 3 acquisition of global image, 4 professional attitude, and others. Relationships of SOCT to SC and OSCE scores were analyzed (P<0.05).
Summary of results: SOCT GIO 1~4 were correlated with scores of general, basic medicine and OT specialized SCs (r=0.23~0.40). GIOs 1, 2 and 4 were correlated with OSCE basic and observation skills (r=0.18~0.42). Multiple regression analysis showed positive contributions of SC basic medicine (β=0.51) and OSCE basic and observation skills (β=0.26) to GIO 1, 3 and 4. Covariance structure analysis showed potential influences of general (β=0.63), basic medicine (β=0.76) and OSCE (β=0.65), but not assessment technology (β=0.11), on SOCT (CFI=0.873, RMSEA=0.810).
Conclusions: Basic medicine and OSCE are a key for students to success in clinical training.
Take-home messages: Understanding of basic medicine and OSCE widens OT ability.

9CC/6
The study of satisfactory rate of midwifery students from Objective Structured Clinical Examination (OSCE)

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Saeed Ebrahim Zadeh (*Mashhad University of Medical Science, Department of Midwifery, Mashhad, Iran*)

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Background: Midwifery is a functional profession, so assessment of clinical performance in midwifery students has an important role in educational quality promotion. In recent decade, OSCE has attracted more attention as an appropriate method for evaluating clinical performance in medical sciences. The purpose of this study is evaluation of satisfactory rate of midwifery students from OSCE.
Summary of work: We developed a descriptive study in which 22 fourth-year midwifery students completed the testing. The integrated OSCE consisted of 12 stations including the methods of neonatal resuscitation, history taking, shoulder dystocia management, and so on …, with 2 station rest. Raters recorded each examinee's performance using a predefined checklist. At the end of the exam, satisfactory rate questionnaire from OSCE was delivered to

the students to answer the questions carefully, and then deliver it to researcher.

Summary of results: 75.3 %, 15.7% and 9% of students mentioned high, average and low level of satisfaction, respectively. In addition, 68.7% of students indicated that the level of stress during the exam compared to traditional evaluation method is significantly low. 50.8% of students believed that OSCE is an appropriate method for evaluating clinical performance in midwifery.

Conclusions: In a nutshell, based on the experience of introducing OSCE into Nursing and Midwifery School, we feel that OSCE can be successfully implemented in midwifery schools, because it is not possible to assess some skills through traditional evaluation methods. Additionally, OSCE represents a significant change in the way the faculty assess student clinical skills.

9CC/7
Introducing OSCE for stomatology education in Georgia: experience of Tbilisi State Medical University

Marina Mamaladze (*Tbilisi State Medical University, Department of Odontology, Tbilisi, Georgia*)
Nino Korsantia (*Tbilisi State Medical University, Odontology, Tbilisi, Georgia*)

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Background: Since 2010 the OSCE has become a useful tool in the assessment of clinical skills of undergraduate students in the department of odontology (Tbilisi State Medical University). It was the first attempt to introduce this method in stomatology education in Georgia.

Summary of work: The OSCE was conducted as an annual examination in odontology for III-V year students of the School of Stomatology to assess their clinical reasoning skills. Clinical scenarios were designed to be close to real clinical cases that students might encounter in their practice comprising (a) Phantom operative odontology, (b) Endodontic treatment of phantom tooth, (c) communication with simulated patient, and (d) analysis of the histological samples of teeth.

Summary of results: Self-assessed clinical competence and study strategies showed that use of OSCE in undergraduate stomatology education appears to stimulate learning, resulting in enhancement of clinical competencies. Interviewing results revealed that more than 86% of the students consider that OSCE provides additional opportunities to demonstrate their clinical performance.

Conclusions: The OSCE is an effective innovative method to assess students' clinical skills in stomatology.

Take-home messages: The successful implementation of OSCE in Tbilisi State Medical University is relevant to stimulate other stomatology schools in Georgia.

9CC/8
Catch them early: Precepted OSCE reviews using guided self-reflection with faculty feedback

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Background: Schon's (1983) reflection-on-action and reflection-in-action provided the framework for students at the Keck School of Medicine (KSOM) to review an Objective Structured Clinical Exam (OSCE) early in their third year.

Summary of work: In 2011, the KSOM introduced an Intersessions Course to enable learners to reflect and consolidate their clinical experiences. One component was an individual OSCE review session designed to foster self-assessment. 21 faculty met individually with 157 students for 30 minutes to watch one OSCE. The student filled out an OSCE Self-Reflection Form. Faculty provided verbal feedback.

Summary of results: 92% of students identified one learning point from their OSCE review (n=144). Four themes identified from learning points: (1) more thorough history and physical examination; (2) better organization; (3) more efficient time management; and (4) improve Patient-Physician Interaction. Students rated OSCE review as the most useful activity during Intersessions. Session quality rated high (4.41, SD 0.83). Amount of new information gained (3.95, SD 1.12) was substantial. Student comments from the course evaluation reiterated the usefulness of the precepted OSCE reviews.

Conclusions: Individual OSCE review with self-reflection, written guided assessment, and faculty feedback was valued by students and useful in identifying areas needing improvement.

Take-home messages: OSCE review with guided self-reflection can assist students' self-assessment.

9CC/9
The Impact of Using a Ventriloscope® on Psychometrics, Cognitive Load, and Performance on an OSCE Station: A Randomized Controlled Trial

Bruce Wright (*University of Calgary, Undergraduate Medical Education, Calgary, Canada*)
Sylvain Coderre (*University of Calgary, Undergraduate Medical Education, Calgary, Canada*)
Anna Consoli (*University of Calgary, Undergraduate Medical Education, Calgary, Canada*)
Kevin McLaughlin (*University of Calgary, Undergraduate Medical Education, Calgary, Canada*)

(*Presenter:* Bruce Wright, University of Calgary, Undergraduate Medical Education, Health Sciences Centre, Room G701D, 3330 Hospital Drive NW, Calgary T2N 4N1, Canada, wrightb@ucalgary.ca)

Background: Given the need to standardize the objective structured clinical examination (OSCE), "patients" are typically actors without abnormal physical findings, which reduces the face validity of the OSCE as clinical skills evaluation. In this study we used a ventriloscope® to simulate clinical findings, and explored the impact on psychometrics, cognitive load, and diagnostic performance on the OSCE station.

Summary of work: We randomly allocated 55 final-year medical students to either standard or ventriloscope®-enhanced format of a formative OSCE station on "acute onset dyspnea". In both formats students took a history from a standardized patient (SP), after which they either requested the physical examination findings (standard format) or performed cardiac and respiratory auscultation using a ventriloscope®. After completion of the OSCE station students rated their subjective cognitive load and raters used a global rating scale to evaluate students' performance.

Summary of results: The standard OSCE format had difficulty index of 0.85 and discrimination index of 0.3, compared to 0.9 and 0.2 for the ventriloscope®-enhanced format. There was no significant difference between groups in either subjective rating of cognitive load after the dyspnea OSCE station (6.43 (2.02) vs. 6.39 (1.15), p = 0.9) or rating of students' performance on the OSCE station (78.3 (9.1) vs. 79.0 (8.9), p = 0.8).

Conclusions: Use of a ventriloscope® can enhance the face validity of the OSCE as an evaluation of clinical skills without adversely affecting psychometrics or cognitive load.

Take-home messages: Use of a ventriloscope® may enhance the face validity of the OSCE.

9CC/10
Internship OSCE, average grades and written exams scores at UNAM Faculty of Medicine in Mexico: Is there a correlation?

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Background: Internship is a critical period during which fifth-year medical students develop clinical competence. UNAM Faculty of Medicine currently uses OSCE exams for formative and end-of-career summative purposes. Several studies show low correlation between OSCE and written exams.

Summary of work: The objective of the study was to correlate OSCE scores before Internship (5th year of medical school), with average grades, written exams and the end-of-career OSCE summative exam. We applied an 18 stations OSCE to 278 medical students before the start of internship

to assess clinical competence, and an equivalent OSCE at the end of the year.

Summary of results: Pre-test OSCE global mean score was 55.4 ± 6.6 and the post-test score was 63.2 ± 5.7 (p<0.001). Cronbach's alpha was 0.62 for the pre-test and 0.64 for the post-test. Pearson's correlation coefficients were: 1) High correlations among OSCE postest and written summative exam (r=0.44), with OSCE pretest (r=0.44) and with average grades of the previous 4 years (r=0.39), all were significant (p<.0001). 2) Low correlation between OSCE (postest) and written exams during Internship.

Conclusions: The correlation of post-internship OSCE scores with average grades and pre-internship OSCE show students' consistency. The correlation between written test and OSCE scores in the end-of-career summative exam provide supportive evidence for validity. There was no unique variable with high predictive value for the final OSCE.

Take-home message: Generalized use of formative OSCE before the Internship could allow for provision of feedback to students, faculty and curriculum developers.

9CC/11
A new strategy for the rater training of high-stakes OSCE

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Background: Rater training for OSCE has long been discussed and the best way to achieve consensus remains controversial. A 15-stations high-stakes OSCE for 144 intern doctors at NTUH was held in May, 2011 and 17 clinical faculty were enrolled in the remote rater-training program. One scenario for each station and the examination time for each station is 8 minutes. Two different raters rated for each scenario.

Summary of work: An internet website for rater-training was established. Every rater could log in with his own identity and password and view the training context. 17 faculty was assigned to two groups as following: Group A – five trained raters and five un-trained raters; Group B – seven trained raters. After the high-stakes OSCE, by analyzing students scores of every scenario, difficulty analysis for each OSCE scenario was performed to review the quality of every OSCE scenario and inter-rater reliability was examined with Pearson analysis. Levene test was performed on the difference between two groups.

Summary of results: The inter-rater reliability of Group A is 0.713(Z=0.923) and 0.768(Z=1.018) of Group B. The difference of Z scores of two groups was examined by Levene test which showed a significant difference (p=0.002).

Conclusions: The internet OSCE rater-training program has demonstrated a way to provided a better inter-rater reliability of a trained rater group.

Take-home messages: Internet technology effectively increases the inter-rater reliability and enhances the participation of faculty.

9CC/12
Standard-Setting for OSCE: A Comparison of Four Standard-Setting Procedures

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Background: A group of 6-8 experts comprising teaching staff from OB-GYN , Surgery, Medicine and Pediatric Department was assigned to review all OSCE questions from the teaching staff from various departments. They then collectively evaluated and weighed each item and determined whether it should be included in the MPL.
Summary of work: In a 14-station OSCE administered to 185 6th-year medical students, each examiner, in addition to evaluating the students' performance on the checklist, also provided the overall rating of students as fail, borderline, pass or excellent. The students' scores were analyzed to obtain a passing score using MPL assigned by experts, adjusted experts' MPL, Borderline Group Method and Borderline Regression Method
Summary of results: It was found that if the experts' MPL was used, only 46 students (24.86 %) passed the exams. The number passing increased if the MPL from the Adjusted experts' MPL, the Borderline Group Method and the Borderline Regression Method, being 66 (35.67%), 144 (77.83%) and 145 (78.37%), respectively.
Conclusions: The judgmental methods of standard setting give vastly different results from the empirical methods, the former resulting in much higher failure rates.

9CC/13
Comparing four methods of standard setting: pre-fixed score, Angoff, borderline regression and Cohen's

Sara Mortaz Hejri (*Tehran University of Medical Sciences, Medical Education, Tehran, Iran*)
Mohammad Jalili (*Tehran University of Medical Sciences, Emergency Medicine, Tehran, Iran*)

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Background: Different methods are used to determine the cut-scores of exams. However, they are rarely used in our country. In this study, we used four methods to set the standard of a pre-internship objective structured clinical examination in Tehran University of Medical Sciences.
Summary of work: A pre-fixed score of 60% was considered as one approach. In the Angoff method, a panel of faculty members was invited to estimate the probability of passing each station for a borderline student. The mean for all judges was considered as station standard. For borderline regression method, a linear regression model for each station was calculated. The checklist score on the regression line for the global scale of 2 was regarded as the station standard. For Cohen's method, we set the standard at 60% of the 95th percentile point
Summary of results: The standards for the total test were 60, 49.15, 42.39 and 42.74 in the pre-fixed score, Angoff, borderline regression and Cohen's methods. The percentages of passing students were 21.9%, 67.6%, 93.3% and 92.4%.
Conclusions: Using four methods to set standard of an OSCE showed that different methods result in different standards and pass rates. It seems that using a credible and reliable procedure, especially in criterion-referenced exams is necessary.

9CC/14
Feasibility of nonparametric item response theory in an objective structural clinical exam

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AM Hettinga (*Radboud University Nijmegen Medical Centre, Institute for Medical Education and Training, Nijmegen, Netherlands*)
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(*Presenter:* GAM Bouwmans, Radboud University Nijmegen Medical Centre, Institute for Medical Education and Training, P.O.box 9101, Nijmegen 6500 HB, Netherlands, G.Bouwmans@owi.umcn.nl)

Background: The use and interpretation of classical item analyses are not unchallenged in analyzing Objective Structural Clinical Exams (OSCEs). It may be argued that item analysis based on nonparametric item response theory adds value to interpreting categorical data of OSCEs.
Summary of work: A sample of three checklists: history taking, physical examination and communication, was analyzed with Mokken Scale Analysis (MSA). For every checklist reliability was estimated with coefficient Cronbach's alpha.
Summary of results: None of the checklists met the MSA assumptions of the monotone homogeneity model (MHM): physical examination ($H = 0.35$), history taking ($H = 0.24$), communication ($H = 0.28$). Reliability coefficient alpha and MSA reliability coefficient rho were sufficient for physical examination ($\alpha = 0.74$; $\rho = 0.75$) and communication ($\alpha = 0.71$; $\rho = 0.74$), but insufficient for history taking ($\alpha = 0.57$; $\rho = 0.60$).
Conclusions: MSA coefficients of reliability, monotonicity, homogeneity and double monotonicity are instructive measures in understanding OSCEs.
Take-home messages: MSA is a new and promising method to analyse categorical OSCE data.

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SESSION 10: Simultaneous Sessions
Wednesday 29 August: 1030-1200

10A Symposium: Performance Based Continuing Professional Development

David Davis *(Association of American Medical Colleges, Washington, DC, USA)*
Nancy Davis *(Association of American Medical Colleges, Washington, DC, USA)*

Traditional CME has often been based on learners' perceived needs rather than actual practice gaps. Today, with increasing access to clinical performance data, we are able to assess the actual needs of individual clinicians and/or practice groups. We will introduce a continuous performance improvement approach to CPD using practice based performance measurement; interventions for improvement, including educational and systems based process; and remeasurement to analyse performance change and improved outcomes. Following a presentation of concepts, the audience will be presented with a template for developing their own performance-based CPD initiatives.

10B Symposium: E-learning for the learner: the challenge of providing learner centred education in the Age of the Internet

John Sandars *(Medical Education Unit, University of Leeds, UK)*
Gareth Frith *(Medical Education Unit, University of Leeds, UK)*
Natalie Lafferty *(Technology & Innovation in Learning Team, Division of Medical Education, University of Dundee, UK)*
Goh Poh Sun *(Department of Diagnostic Radiology, National University Hospital, Singapore)*

The Internet offers a wide range of potential learning resources, from websites and blogs to social networks and media sharing sites, that can be rapidly accessed anytime and anyplace by a variety of technologies, from static computers to mobile devices. Many learners already make extensive use of this ubiquitous approach to provide personalised medical education but there are concerns about the quality of the learning experience. This symposium will critically explore how the exciting possibilities of the Age of the Internet can be practically translated into medical education, including the development of new digital competences for both educators and learners.

10C Short Communications: Management

10C/1
3 level accreditation standards for excellence in medical education

Ducksun Ahn *(Korea University Medical College, Plastic Surgery, Seoul, Republic of South Korea)*

(Presenter: Ducksun Ahn, Korea University Medical College/Korean Institite of Medical Education and Evaluation, Plastic Surgery, 126-1 5 Ga, Anamdong, Sungbukku, Seoul 136-705, Republic of South Korea, dsahn@korea.ac.kr)

Background: Since 2000, an accreditation system for basic medical education was established in S. Korea.The accreditation standards have two levels of achievement: "Must" and "Should". However, this traditional two-level system did not promote excellence in medical education, but rather, adequacy.
Summary of work: From 2006 to 2011, another optional third level of standards was installed for the promotion of excellence in medical education. Medical schools that fulfill one of the five areas of accreditation standards are recognized and thusly rewarded.
Summary of results: During this period, three medical schools out of 40 were identified as candidate medical schools for excellence. Two medical schools, however, were restricted from eligibility due to lack of post-accreditation sustainability. Only one medical school qualified for the level of "excellence," in the curriculum area.
Conclusions: Although the three-level accreditation system achieved its original goal, the national accreditation body decided to discontinue the program. The decision was due to the fact that there will be a new initiative from the Association for Medical Education in Europe (AMEE) for the promotion of excellence in medical education: ASPIRE.
Take-home messages: From the indigenous experience of the South Korean three-level system, ASPIRE will contribute to the promotion of excellence in medical education both locally and globally.

10C/2
Quality Assuring Undergraduate and Postgraduate Medical Education and Training

Martin Hart *(General Medical Council, Education, London, United Kingdom*)

(Presenter: Martin Hart, General Medical Council, Education, 350 Euston Road, London NW1 3JN, United Kingdom, mhart@gmc-uk.org)

Background: The GMC is looking to enhance its arrangements for quality assuring undergraduate and postgraduate medical education and training.
Summary of work: A review was commissioned to examine current quality assurance methodology, both in the UK and abroad and within medicine other professions.
Summary of results: The first stage of research makes a number of recommendations which are applicable to all health sector regulators of education and training: • Increased use of thematic QA to recognise and share good practice and achieve greater consistency between providers. • Inclusion of students on QA visits teams. • Effective training and support for all members of QA visit teams. • Co-ordination of joint inspections between regulators where practicable, to share evidence and minimise the assessment burden on providers. • Clear definition of interest groups for QA and reporting formats which are tailored to intended target audiences. • Continued sharing of good practice between health sector regulators.

Encouragingly, a number of these are already being undertaken by the GMC but there remains room for further improvement.

Conclusions: The findings of this research suggest a broad QA landscape that shows a trend towards increasing alignment with principles such as proportionate to risk, outcome focussed and enhancement-led.

10C/3
Impact of Accreditation on the Quality of Undergraduate Medical Education: Methodological overview

Saleh Alrebish (*Monash University, Health Workforce Education and Assessment Research Team, Melbourne, Australia*)
Brian Jolly (*Monash University, Health Workforce Education and Assessment Research Team, Melbourne, Australia*)

(*Presenter:* Saleh Alrebish, Monash University, Health Workforce Education and Assessment Research Team, 115 Rosebank Ave, Clayton South, Melbourne 3169, Australia, Saleh.Alrebish@monash.edu)

Background: The accreditation of undergraduate medical education (UME) is a universal undertaking. There are studies focusing on the impact (outcome) of accreditation on UME. This paper aims to analyse and compare the methods used in these studies.
Summary of work: Available published articles from major databases were systematically analysed. Searching manuscripts' references was also undertaken. Grey literature was included through hand searching data of cognate organizations e.g.: General Medical Council, Australian Medical Council, LCME, FAIMER, and WFME.
Summary of results: Most of the published studies are a commentary or expert opinion articles and mainly (60%) from one geographical area. Moreover, all of the studies evaluated Impact using either data from the site visit reports or data from the opinions of stakeholders or policy makers. None used both sources, and none used additional data. A more suitable methodology will be illustrated with reference to an anonymized case study. This uses both the above sources and further dimensions (e.g. observational longitudinal studies, reviewer's opinions and student's/graduates performance).
Conclusions: Current processes do not result in evidence strong enough to draw a clear picture for policy makers. Thus there is a need for more empirical research in this area to move away from speculative claims.
Take-home messages: There is a clear need for more and better-designed studies to assess and analyse the long- and short-term impact of accreditation systems on the quality of UME.

10C/4
Understanding the needs of department chairs in academic medicine

Susan Lieff (*University of Toronto, Faculty of Medicine, Toronto, Canada*)
Jeannine Banack (*University of Toronto, Faculty of Medicine, Toronto, Canada*)
Lindsay Baker (*University of Toronto, Faculty of Medicine, Toronto, Canada*)
Scott Reeves (*University of California, San Francisco, Center for Innovation in Interprofessional Healthcare Education, San Francisco, United States*)
Maria Athina (Tina) Martimianakis (*University of Toronto, Faculty of Medicine, Toronto, Canada*)
Catharine Whiteside (*University of Toronto, Faculty of Medicine, Toronto, Canada*)

(*Presenter:* Susan Lieff, University of Toronto, Faculty of Medicine, Centre for Faculty Development, St. Michael's Hospital, 30 Bond Street, Toronto M5B 1W8, Canada, s.lieff@utoronto.ca)

Background: While the department chair has been identified as playing a key role in today's universities there is little empirical evidence about their needs or the competencies required. This paper provides insight into the complex needs of chairs to inform the design of support and development opportunities.
Summary of work: A case study approach and critical case sampling strategy were employed. 21 chairs (84%) participated in interviews. An inductive thematic analysis was conducted and through an iterative process of relating and grouping of emerging themes a coding structure was identified.
Summary of results: The needs of chairs were grouped into five themes: (1) cultural and structural awareness; (2) network of support; (3) infrastructure growth and development; (4) interpersonal skills; and (5) influence.
Conclusions: While suggestions have been made to enhance the success of chairs, there is little research to support these recommendations. This study provides empirical evidence that builds on our growing understanding of the needs of chairs. Our findings suggest that chairs require access to orientation, mentorship, leadership development and communities of practice to facilitate smooth transition and successful leadership.
Take-home messages: This work illuminates essential capabilities, infrastructure and supports that should inform the selection, orientation and support of chairs.

10C/5
An intuitively accessible presentation of GMC Trainee Survey results

David Yates (*Kent, Surrey and Sussex Deanery, Quality Management, London, United Kingdom*)
Marco de Solis (*KSS Deanery, Quality Management , London, United Kingdom*)
Karen Gibson (*KSS Deanery, Quality Management, London, United Kingdom*)

(*Presenter:* David Yates, Kent, Surrey and Sussex Deanery, Quality Management, KSS Deanery, 7 Bermondsey Street, London SE1 2DD, United Kingdom, dyates@kssdeanery.ac.uk)

Background: The General Medical Council (GMC) performs an annual survey into postgraduate trainees' perceptions of their posts. The results can be viewed on-line at different levels ranging from individual departments to deaneries. The survey contains much valuable information, but assimilation of so much information can be difficult, as can determination

of the validity, particularly when respondent numbers are small.

Summary of work: From 2007-2009 Deanery Heads of School devised tables showing results for their Schools. In 2010 the Quality Department developed these to produce a series of colour coded tables which allow Directors of Medical Education (DMEs) to compare results for departments within their hospitals, and Heads of School to compare departments across hospitals. These will be displayed.

Summary of results: The tables enable DMEs and Deanery staff to see how results within individual departments relate to each other, and which departments appear to be performing strongly, or otherwise. Performance in individual indicators can also be assessed across departments / hospitals. The tables also contain quantitative information which allows estimation of their validity.

Conclusions: The colour-coded tables allow rapid assimilation of large amounts of data, and have become important components of the Kent, Surrey and Sussex (KSS) Deanery's Quality Management system.

Take-home messages: A picture is worth a thousand words.

10C/6
The impact of a disrupted learning environment on medical student performance

Tim Wilkinson (*University of Otago, Christchurch, Medical Education Unit, Christchurch, New Zealand*)
Anthony Ali (*University of Otago, Christchurch, Medical Education Unit, Christchurch, New Zealand*)
Caroline Bell (*University of Otago, Christchurch, Psychological Medicine, Christchurch, New Zealand*)
Frances Carter (*University of Otago, Christchurch, Psychological Medicine, Christchurch, New Zealand*)
Chris Frampton (*University of Otago, Christchurch, Psychological Medicine, Christchurch, New Zealand*)
Jan McKenzie (*University of Otago, Christchurch, Medical Education Unit, Christchurch, New Zealand*)

(*Presenter:* Tim Wilkinson, University of Otago, Christchurch, Medical Education Unit, C/- Princess Margaret Hospital, P O Box 800, Christchurch 8140, New Zealand, tim.wilkinson@otago.ac.nz)

Background: Over 2010-2011 Christchurch experienced >10,000 earthquakes (1 over magnitude 7, 3 over magnitude 6). The medical school recovered quickly after the 2010 magnitude 7 earthquake but the aftershocks resulted in closure of the main medical school building over all 2011 and disruptions to students' work and home environments. However the course was still delivered. We were unclear how this would impact on achievement on assessments.

Summary of work: One third of our students are in Christchurch which allowed the remaining two thirds to act as controls. We used results of earlier assessments to model the predicted assessment results of Christchurch students. From this we could estimate the impact on student learning.

Summary of results: The impact was greatest in 2010 (when the physical learning environment was less affected) and less in 2011 (when the physical learning environment was the most affected).

Conclusions: Students and staff can develop coping strategies if there are major, but expected, disruptions.

Unexpected disruptions, despite lesser physical environment effects, caused the greater impact.

Take-home messages: Disruptions that are unexpected have greater impact than those that can be planned around. We hypothesize that this could be relevant to other events that impact on student learning.

10D Communications courtes (en français): Apprentissage des compétences professionnelles

10D/1
Comment les cliniciens enseignants utilisent-ils leur modèle de rôle dans l'enseignement des rôles CanMEDS en résidence?

Luc Côté (*Université Laval, Médecine familiale et médecine d'urgence, Québec, Canada*)
Patricia-Ann Laughrea (*Université Laval, Opthalmologie et ORL, Québec, Canada*)

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Contexte: Au Canada, les rôles CanMEDS constituent le cadre de référence pour l'enseignement et l'évaluation des résidents. Bien que l'apprentissage au contact de modèles de rôle soit une modalité pédagogique faisant consensus, on ne sait pas si les cliniciens enseignants sont conscients de ce rôle, ni comment ils l'exercent auprès des résidents. L'étude visait à répondre à ces questions.

Résumé des travaux: L'étude descriptive, de nature qualitative, a été réalisée auprès d'un échantillon intentionnel de 20 cliniciens impliqués dans diverses spécialités médicales et chirurgicales à l'Université Laval, Québec. Ceux-ci ont participé à une entrevue téléphonique individuelle semi-dirigée.

Résumé des résultats: L'exercice du modèle de rôle est jugé important pour les cliniciens, surtout pour ces rôles : communicateur, collaborateur et professionnalisme. Cependant, peu de cliniciens utilisent une démarche visant à jouer ce rôle de manière explicite. L'étude a permis d'identifier 4 stratégies pédagogiques jugées importantes. Les cliniciens ont aussi identifié les raisons pour lesquelles l'exercice du modèle de rôle était difficile.

Conclusions: L'étude contribuera à enrichir le curriculum de formation des cliniciens sur l'enseignement des CanMEDS en résidence.

Messages à retenir: Être un modèle de rôle explicite contribue à l'apprentissage des compétences professionnelles en résidence

10D/2
Etude comparative de deux méthodes d'enseignement de l'examen sénologique et gynécologique: mannequins et vidéo-clips

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Contexte: Etudier la satisfaction des étudiant(e)s en médecine concernant deux méthodes d'enseignement de l'examen clinique sénologique et gynécologique (mannequins et vidéo-clips).

Résumé des travaux: Après les séances d'enseignement, les étudiants (n=79; femmes 67%; âge médian 20 ans; 2ème année (87%) et 3ème année (13%)) ont rempli un questionnaire de satisfaction comportant des items sur les qualités pédagogiques des deux méthodes (apport de la technique d'enseignement pour la technique d'examen, apport pour les conditions de réalisation de l'examen, apport pour l'accroissement de la confiance en soi avant de faire le premier examen).

Résumé des résultats: Les étudiants ont rapporté une satisfaction importante (score 3/4 ou 4/4) vis à vis des deux méthodes, pour chaque item. Concernant leur satisfaction vis-à-vis de l'apport en connaissances pratiques, les étudiants ont plus apprécié les vidéos clips que les séances sur mannequins, à la fois pour l'examen sénologique et gynécologique (scores satisfaction: 4 vs 3, p

Conclusions: Les deux méthodes d'enseignement sont associées à un haut niveau de satisfaction des étudiants.

Messages à retenir: Ces méthodes devraient être combinées dans des séances mixtes.

10D/3
L'observation par les pairs : Outil essentiel à l'apprentissage de l'examen physique chez les étudiants en médecine

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Contexte: L'observation par les pairs est bénéfique pour l'apprentissage des habiletés psychomotrices en chirurgie. On ne le sait pas pour l'apprentissage de l'examen physique (EP) par les étudiants en médecine. Nos recherches visent à étudier la place de l'observation des pairs dans l'apprentissage de l'EP.

Résumé des travaux: Trois cohortes d'étudiants de deuxième année ont participé. Des designs comparatifs ont été utilisés pour étudier (1) l'influence de l'observation d'un pair; (2) l'influence de la performance des pairs observés, et (3) l'influence de la rétroaction par les pairs sur l'apprentissage de l'EP. Les performances des participants ont été filmés et analysés.

Résumé des résultats: L'étude 1 a révélé que les participants ayant l'opportunité d'observer des pairs performent mieux que les participants qui n'ont pu observé (84% vs 76%, p <.05).

Conclusions: Tout comme en chirurgie, l'observation par les pairs favorisent l'apprentissage d'habiletés psychomotrices, comme l'EP, chez les étudiants en médecine.

Messages à retenir: L'apprentissage en groupe qui donne aux étudiants l'occasion d'observer ses pairs et de recevoir une rétroaction par eux pendant qu'ils apprennent, favorisent l'acquisition de l'EP.

10D/4
Apprentissage de l'examen clinique de la tête au pied

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Contexte: Les étudiants ont souvent besoin, avant de débuter leurs stages, d'une mise à niveau de leurs compétences en matière d'examen clinique et d'une intégration de leurs aptitudes cliniques antérieurement apprises par système.

Résumé des travaux: Un atelier novateur d'apprentissage à l'examen clinique ergonomique de la tête aux pieds a été créé en Faculté de Médecine à Lausanne. Il est proposé aux étudiants de 2ème Master, par groupe de 8, à Lausanne et à Liège. L'atelier, contexte d'apprentissage protégé et respectueux, est animé par un tuteur médecin généraliste. L'examen clinique est réalisé sur un patient standardisé (PS). Dans un atelier de 2h, chaque étudiant examine entièrement le PS et bénéficie de feedbacks du groupe et de corrections de gestes par le tuteur. Tuteurs et PS sont formés

préalablement.

La présentation décrira les outils pédagogiques (paradigme Pratique/Guidage, PS , apprentissage par groupe, feedbacks spécifiques, professionnalisation, modèle de rôle).

Résumé des résultats: Les étudiants émettent massivement des avis positifs sur le dispositif, les apprentissages réalisés et l'encadrement.

Conclusions: L'apprentissage de l'examen clinique semble favorablement influencé par la participation à un atelier enrichi de la présence d'un PS, basé sur les concepts de pratique/guidage et feedbacks spécifiques.

Messages à retenir: Intérêt d'un examen clinique de la tête aux pieds avec PS.

10D/5
Perception des étudiants sur l'Apprentissage par Problèmes (APP) : une analyse des facteurs influençant leur propre fonctionnement.

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Contexte: L'implémentation d'un nouveau format d'apprentissage est en perpétuelle évolution. Suite à certaines rumeurs circulant dans notre faculté dont l'enseignement par APP date de 15 ans, nous avons étudié comment les étudiants fonctionnent dans ce format et si leurs pratiques diffèrent de celles prévues à l'origine.

Résumé des travaux: Nous avons étudié la perception des étudiants sur leur fonctionnement en APP en analysant de manière qualitative et quantitative leurs réponses ainsi que les commentaires libres à 20 questions portant sur des thèmes liés à l'APP (tutorial, bilan, auto-apprentissage, rôle du tuteur et examens).

Résumé des résultats: Un total de 474 étudiants ont répondu au questionnaire et déposé 1636 commentaires. Trois facteurs semblent influencer négativement leur fonctionnement en APP : le manque de leadership des tuteurs, l'imprécision des objectifs d'apprentissage et un manque de cohérence entre les formats d'apprentissage et d'examens. En conséquence, les étudiants étudient de manière plus superficielle.

Conclusions: Le fonctionnement des étudiants en APP peut évoluer sous l'influence de leur environnement d'apprentissage, dans notre cas les objectifs d'enseignement, l'efficacité des tuteurs et les examens.

Messages à retenir: L'analyse des étudiants sur comment ils fonctionnent en APP et pourquoi, apporte des explications précieuses sur les mécanismes qui entravent le processus d'apprentissage en profondeur que l'APP tente de promouvoir.

10E Short Communications: Progress Test

10E/1
The Netherlands Interuniversity Progress Test in Medicine – further developments

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Background: Four Dutch universities jointly construct/administer the interuniversity progress test (PT) in medicine (iPTM) to all medical students (7500). Each test consists of 200 newly constructed MCQs sampling the complete domain of medical knowledge.
Problems are: no central IT-infrastructure, limited support of item construction/review, difficulty variation, logistic requirements, and limited multimedia options.

Summary of work: Two projects funded by SURFfoundation are on the way to tackle the problems. VGTogether, development of a generalized central IT-infrastructure for PT and support of item construction/review. Item construction systems were evaluated, providers of infrastructure are being reviewed. AdaPT: development of computer based adaptive progress testing (CAPT). Items fit for CAPT were selected from the iPTM-database, calibration of items using available formula scoring data is developed.

Summary of results: VGTogether: The IMSm (Item Management System medizin) of the University of Heidelberg, Germany was selected to be extensively tested. AdaPT: 25% of the iPTM-items was found appropriate for CAPT.

Conclusions: IMSm is used by 50% of the medical schools in Germany for itembanking. IMSm is interested in iPTM's know-how of Progress Testing, thus cooperation of iPTM and IMSm works both ways. Thanks to these projects further development of the Progress Test is proceeding well.

Take-home messages: Cross-border cooperation of national networks may provide benefits for all.

10E/2
National progress test outcome in a vertically-integrated undergraduate curriculum with biomedical-psycho-social profile at the Faculty of Medicine and Psychology, Sapienza University of Rome

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Background: A vertically-integrated undergraduate curriculum (UC) was activated in 1999, in order to develop an education based on biomedical-psycho-social profile in our medical students.
Summary of work: The UC considers: 1) vertical and horizontal integration between basic and clinical disciplines; 2) early clinical exposure (hospital and community settings, the first 3 years); 3) a course on translational research methodology (the last 3 years); 4) a parallel longitudinal course of "medical scientific methodology and medical humanities" (all 6 years).
The UC participates to the national Progress Test, a knowledge progress assessment test, which is organized yearly by the National Council of the Italian Medical Course Degrees, and constituted by 150 basic sciences and 150 clinical sciences questions.
Summary of results: Results obtained in the years 2007-2011 were analyzed. 85,6% of Italian degree courses have participated each year to the test (47% of total Italian medical students). About 35% of our faculty students applied to the test.
Conclusions: Analysis of results revealed significant better outcomes in progress knowledge compared to the national means both in basic and clinical sciences, either in each year and for all six year courses (all measures $P \leq 0,05$).
Take-home messages: This curriculum model gives good results in knowledge acquisition and maintaining.

10E/3
Do Teachers of the Medical Curriculum in Aachen use the Progress Test Medicine as a tool for curriculum evaluation? A qualitative approach

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Background: Progress testing offers many possibilities for medical faculties to evaluate the curriculum. It gives information about growth of knowledge of individuals and cohorts, allocation of knowledge within curricula or sustainability of taught contents. This study was to find out, how this information is used by teachers in Aachen.
Summary of work: We did 11 semi-qualitative Interviews. The qualitative sample included teachers from different subjects with a wide range of age, professional status, dedication and experience in teaching.
Summary of results: Most of the teachers had no knowledge about PTM method and background, questions or results. They did not associate the results with their teaching or the quality of the curriculum but were interested to see the PTM results of their discipline and the questions.
Conclusions: Teachers were interested in the PTM but not able to value the suitability as an evaluation tool because they had no methodological knowledge or never seen questions nor results. This asks us to handle with method of PTM, questions and results more transparently to make teachers use the information. Thus we will go on collecting data without any benefit but feedback for students.
Take-home messages: Methodological framework, questions and results should be provided to teachers transparently.

10E/4
Item growth patterns and item relevance in relation to adaptive progress testing

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Background: Progress testing (PT) is a promising approach to interuniversity collaboration on construction and test administration, but concerns remain as to item relevance, measurement inefficiency, and logistics. Therefore, we study the feasibility of and requirements for computer-based adaptive progress testing (CAPT). To be fit for CAPT a PT item should demonstrate increasing probability of a correct answer (Pcorrect) over year groups (growth item). This study

examines the proportion of growth-items and the correlation between item relevance and growth.

Summary of work: Calculation of Pcorrect-growth after treatment (Pcat) for 196 PT items. Criteria: growth-item if Pcat≥20% (year 1-3 subject), Pcat≥10% (year 4 subject). Students and teachers rated items' relevancies.

Summary of results: For 176 items the subject year was indicated, 44 items (25%) were found to be growth-items. Correlation relevance-growth: 0.54, p<0.0005. 25% of the PT items are fit for CAPT. Part of the 75% non-growth items are low-relevance items. Relevant non-growth items comprise mainly less application-oriented knowledge. Further study of items' content necessary.

Conclusions: 25% of PT items is fit for CAPT; for relevant items the proportion is considerably higher.

Take-home messages: Being more stringent regarding relevance of PT items improves the realisability of an adaptive PT.

10E/5
Progress test or not: that is the question

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Background: The progress test assesses the application of knowledge required by the time of graduation, with regular testing and feedback to facilitate learning. It is dissociated from the in-year curriculum, and encourages broader learning and retention of knowledge.

Summary of work: We have used progress testing, administered three times a year, together with a end-of-year written assessment, through three years of clinical medicine in a diet of assessment. Performance in both forms of assessment, correlation with each other and with respect of clinical rotations undertaken was analysed. Performance of 3 main tracks of students from differing backgrounds viz school-leaver entry, graduate entry and clinical transfers from another curriculum was also studied.

Summary of results: Performance in the progress test shows incremental increase in test scores over the three year period of testing. There was strong correlation between performance in the last progress test of each year and the end of year written test. Analyses of subsets of the cohort showed differences in performance of the 3 tracks of students, but these diminished over the three years

Conclusions: Progress test correlates strongly with and is predictive of end-of-year tests of teaching and learning. There is redundancy in such testing and this should be considered in design of assessment strategies.

10E/6
Psychometric impacts of technical item writing flaws in progress testing

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Background: Technical item flaws in progress tests can decrease their difficulty and impair their utility.

Summary of work: An evaluation of the psychometric impact of non-compliance with recognized item writing recommendations was undertaken for 411 items from four undergraduate progress tests. Compliance was assessed by three judges and defined by majority agreement. Psychometrical analyses used classical and item response theory (IRT), namely the 2-parameter logistic model. T tests compared parameter estimates for flawed and unflawed items. Correlational and multiple linear regression analyses investigated the relationship between parameter estimates and the occurrence of number and types of flaws.

Summary of results: Analyses of IRT parameter estimates indicated flawed items were significantly easier and less discriminating. Analyses of classical item statistics only revealed significantly higher percentage of correct answers. Total number of flaws was significantly negatively correlated with both IRT difficulty and discrimination indices. Regression results indicated that IRT discrimination indices were lower for items with grammatical errors, unfocused stems, and heterogeneous alternatives; items with long alternatives and alternatives containing absolute terms were easier.

Conclusions: Flawed items were significantly associated with poorer psychometric characteristics; IRT analyses revealed more problems than classical item statistics.

Take-home messages: Avoidance of item writing flaws should be a priority for quality improvement of assessments in medical education.

10F Short Communications: Student Engagement

10F/1
Involvement of students into the development of Modular Curriculum of Charité – University Medicine Berlin

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Background: Students face a unique and most valuable perspective for curricular evaluation in terms of comprehensibility, work load and transparency of assessment. If self-regulated learning with a responsibility for one's own learning has been established, students have the highest driving force to improve curricula. This offers a most effective feedback loop for adjustments. Therefore we tried to involve them as much as possible into the development of the new modular curriculum at our institution.
Summary of work: For the planning phase of each single 4-week-module a student was appointed as a formalised co-chair of the planning committee. In this function the student also participated in re-evaluation and revision of learning formats and contents, circulated learning objectives (number and quality), MCQ-questions, and forms of assessment. Additionally, students formed committees to revise learning objectives and MCQs to propose improvements.
Summary of results: Curricular changes were widely accepted by faculty and could rapidly be incorporated into the following term.
Involved students were highly accepted by the planning faculty. Many curricular changes were initiated by students, which in turn enhanced students' self-efficacy.
Take-home messages: Involvement of students into curricular development is feasible and adds an important planning perspective.

10F/2
Indonesia National Mapping on Health Profession Students' Participation in Institution Development

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Background: Concern about the new HPE accreditation standard has been put on student participation in the institutional development database. This area has been less

taken into account though it would play an important role for institution CQI. Research was conducted to map the existing state of student participation in HPE institution as initial data to set more appropriate policy for an accreditation standard that would foster HPE Quality.
Summary of work: The HPEQ national taskforce consisted of an academician and student representative. It distributed an online questionnaire, which was adapted and validated from CDESR, through the HPE student representative by systematic sampling from September-November 2011.
Summary of results: A 100% response rate was achieved, consisting of 1046 respondents from 7 existing HPE programs. The results showed high commitment of the student representative in institution improvement while there were skeptical views from their faculty and leadership (42%). Institutions have used students for accreditation purposes (61%) but without significant appropriate follow up feedback or action (80%).
Conclusions: Student participation in HPE institution has been viewed as essential but is still only a small part of institution management to foster CQI.
Take-home message: The new accreditation standard on student participation which is essential for HPE Institution CQI must be further advocated by an appropriate empowering program and empirical model endorsed by DGHE.

10F/3
Can students generate good quality Situational Judgement Test (SJT) questions for formative assessment?

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Background: SJTs are replacing 'open-space' questions for selection to UK Foundation Programmes and test non-academic, professional attributes. Students about to undertake summative SJTs have limited knowledge and understanding about SJTs and few questions are available for practice. We aimed to assess whether final-year students can write SJTs to provide formative assessment for peer groups, and to evaluate this process.
Summary of work: Two students constructed a bank of SJTs based on scenarios from personal experiences. These were reviewed by a panel of clinical and university staff. Feedback was positive, suggested adaptations were incorporated, and

one question was removed from the final examination. Final-year medical students were invited to participate in a formative assessment using 22 SJTs and to evaluate the questions.

Summary of results: 163 students sat the examination. Marks ranged from 258 to 370 out of 440. Item-total correlation showed 18 questions achieved acceptable discriminative value. Results of analysis of adverse impact, coachability and previous academic performance were consistent with that expected of a quality assessment. After assessment, 61% felt better prepared for summative assessments. Scenarios were regarded as well-written, realistic and relevant, but students requested more questions, and for answers to be given immediately.

Conclusions: Students are capable of formulating good quality SJTs for formative assessment.

10F/4
Development of the student-initiated instrument to assess professional behaviour of pre-clinical students: a pilot study

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Background: Professionalism may be conceptualised differently from one culture to another. In Thailand, we, a group of second-year medical students, noticed unprofessional behaviours among our classmates. We, thus, initiated a project to assess professionalism.

Summary of work: Using grounded approach, this study was divided into 2 stages. The first was to identify professionalism elements based on daily activities of pre-clinical students by interviewing students, teachers and supporting staff. The result was used to develop the 37-item instrument, comprising 13 positive and 24 negative behaviours with 6-point scale. There were 18 personal-level, 15 interpersonal-level and 4 societal-level items. This self-administered instrument was piloted with 572 pre-clinical students at Chulalongkorn University.

Summary of results: The Cronbach's alpha was 0.8223. The scores ranged from 32.4% to 93.0% with an average of 67.4%.

The three least common negative behaviours were all personal-level. The three least common positive behaviours were societal-level and interpersonal-level. There were statistically-significant differences of the scores between classes (p = .000), gender (p = .001) and tracks of admission (p = .032).

Conclusions: This student-initiated instrument was particularly designed to assess culturally-specific professional behaviours of pre-clinical students. We hope that professionalism elements found in our study should contribute to the literature in medical professionalism research.

10F/5
Self construction of multiple choice questions by students leads to better exam results

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Background: Medical students often struggle with the amount of learning materials in their curriculum. In 2010, a measurement of the study time of medical students at the KULeuven revealed that students postpone their studying. A learning strategy that has been proved to help them to retain more course content than just studying is the creation of exam questions by students.

Summary of work: In order to encourage students to study earlier for a gastrointestinal physiology examination, they were offered the opportunity to write multiple choice questions (MCQs) before a certain deadline. Guidelines for developing MCQs were provided. Two good MCQs were rewarded with a bonus point on the exam. After the exam, students were asked to fill in a survey about their experience in writing MCQs.

Summary of results: 48% of the students (171/354) submitted questions. Students who constructed MCQs had on average an 8,7% higher score (82%) than those who didn't (73,3%).The questionnaire revealed that 71% of the students (121/171) were motivated to study earlier thanks to the opportunity to write MCQs.

Conclusions: The writing of MCQs seems to encourage students to study earlier and seems to prepare them to solve a MCQs exam.

Take-home messages: The opportunity to write MCQs resulted in a better outcome of the exam.

10G Research Papers: Multi-Centre Research

10G/1
Associations between medical school and career preferences in first year medical students in Scotland

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Introduction: Many factors influence the career decisions made by medical students. These range from individuals' characteristics (1), to the perceived benefits of particular specialties (2), to factors associated with medical school curricula such as experience of the chosen specialty (3). It is also clear that demographic factors such as gender influence medical career preference (4). There is evidence, mostly from the US, that some students have reasonably firm career preferences on entering their medical studies, although these do shift for a proportion of students (5). Although there may be some similarities, findings from US graduate-entry medical students on non-integrated degree programmes are unlikely to be directly applicable to other medical education settings such as the UK where most students enter medicine as undergraduates aged 17-20 years. Little is known about career preferences in new entry medical students on undergraduate degree programmes, or about the relationship between career preferences and medical school. Our aim was to explore students' career preferences at the time of entry into medical school.
Methods: Year 1 (2009-10) students were surveyed at the five Scottish medical schools (Aberdeen, Dundee, Edinburgh, Glasgow, St Andrews) which together have approximately 1,000 students in each year of study. Questions asked about demographic factors, career preference and influencing factors. Free text responses were categorised into recurring themes using content analysis. Quantitative data were analysed using SPSS, Version 15.0. Binary logistic regression was used to identify predictive factors for dichotomous outcomes. The Chi Square test was used to compare student demographics between the schools and the proportion of students indicating each career preference and the number of training posts in that specialty.
Results: The overall response rate was 88% [883/1005]. No significant differences were found between the medical schools with regard to first choice specialty. Surgery (23%), medicine (18%), general practice (18%) and paediatrics (16%) were the top careers choices. Few differences were found between schools in terms of importance of job-related factors on future career preferences. Work-life balance, perceived aptitude/skills and amount of patient contact were rated as most important by the majority of respondents. Students for whom work/life balance (OR=2.2) and continuity of patient care (OR=2.1) were extremely important were

more likely to prefer general practice. A female preference for general practice was eliminated when these variables were included in the analysis. Student origin influenced preference for locality of training and working after medical school.
Discussion: Students' early career preferences are similar across medical schools. Their preferences result from the interplay between demographic factors and characteristics of the specialty itself. In particular, student origin is pertinent to career preference in terms of where to study and work. Work-life balance is very important to tomorrow's doctors, and the data hints at this breaking down some of the traditional gender differences in specialty choice.
Conclusions: A robust, longitudinal study is required to explore if, and how, these students' training and career preferences change as they progress through medical school and training. This would provide more understanding of the influence of variables such as curriculum design and quality of the learning environment on training choice and outcomes.
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10G/2
Impact of national context and culture on curriculum change: a case study

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Introduction: Despite widespread recognition of the advantages of integrated curricula, many medical schools seem reluctant to change their discipline-based curricula. Earlier studies pointed to national culture as a potential

barrier to curriculum reform in medical education (Jippes & Majoor, 2008;2011). In particular, a high score on Hofstede's cultural dimension 'uncertainty avoidance' was found to have a significant relationship with a low implementation rate of integrated curricula (Hofstede, 2001, Jippes & Majoor 2008;2011). According to Hofstede, uncertainty avoidance "indicates to what extent a culture programmes its members to feel either comfortable or uncomfortable in unstructured situations". "Uncertainty avoiding societies try to minimise the occurrence of such situations by strict laws and regulations, safety and security measures and on the philosophical and religious level by a belief in absolute truth" (Hofstede, 2001). Medical schools in uncertainty avoiding countries may have little room to change their curricula due to strict laws and rules and members in these medical schools probably avoid changes as much as possible to prevent uncertain situations (Jippes & Majoor, 2008;2011). However, some medical schools succeeded to introduce integrated curricula despite their country's relatively strong uncertainty avoidance. This raised the question: 'How did those schools overcome the barrier of uncertainty avoidance?'

Methods: Based on earlier research, Austria was found to offer the combination of a high score on Hofstede's uncertainty avoidance index and integrated curricula in all its medical schools. Twenty-seven key change agents in Austria's four medical universities were interviewed in 2011. The interviewees were first asked to describe a negative and a positive critical incident during the change process in their school. Thereafter questions addressed factors influencing curriculum change described by Bland (Bland, 2000) and possibly underexplored factors as described by Kanter, including the need for change, the history of change and barriers to implementation. The transcripts were analysed using thematic cross-case analysis.

Results: Initially, strict national laws and limited autonomy of schools inhibited innovation and fostered an 'excuse culture': 'It's not our fault. It is the ministry's'. A new law increasing university autonomy eventually stimulated reforms. However, only increased autonomy would have been insufficient for change as many staff members still sought to avoid change. A strong need for change, supportive and continuous leadership, and visionary change agents also were deemed essential.

Discussion: Strong uncertainty avoidance enhances restrictive legislation which stimulates resistance towards curriculum change. Opposition by faculty can be overcome in strong uncertainty avoiding societies when the legislation encourages change, together with internal stimulating factors for change. Many resources provide strategies for curriculum change in medical schools (Genn, 2001) and similarly several resources provide strategies for dealing with cultural influences on change. Future studies should focus on strategies to deal with cultural differences specifically in medical schools.

Conclusions: Our study showed that changing towards an integrated curriculum is a complex process involving different stimulating and inhibiting forces, several of which appear to be universal and several which appear to be culture-specific. Thus, considering potentially inhibiting universal and culture-specific factors before embarking on curricular reform may facilitate the reform's eventual successful implementation.

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10G/3

Evaluation by prediction instead of opinions: Less response bias in course evaluations and significantly fewer respondents needed

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Introduction: Traditional student feedback questionnaires are imperfect tools for evaluating undergraduate medical courses, owing in large part to low response rates and response bias. Preliminary research suggests that 'prediction' methods of course evaluation - in which students are asked to estimate the opinions of their peers rather than provide their own personal opinions - require a significantly smaller number of respondents to yield results comparable to those obtained via traditional rating systems, and are less subject to biasing influences (Cohen-Schotanus et al. 2010). This study seeks further support for the validity of these findings by investigating (1) the prediction method's performance and (2) its potential for bias in a large cohort of medical students recruited across different educational settings.

Methods: Students from McGill University, Montreal, Canada (210 first-year students) and from the University of Groningen, The Netherlands (371 first-year and 385 third-year students) were enrolled in the study. At each site, participants were randomly assigned to complete course evaluations using the prediction or traditional (opinion) method. The numbers of respondents required for stable outcomes were determined using an iterative process, in which the average outcomes of sub-samples were repeatedly compared to that of the entire group, with one person added to the sub-sample with each subsequent comparison. Differences between the prediction and opinion methods with respect to the numbers of respondents required were analyzed using t-tests. MANOVA was used to analyze differences in evaluation outcomes between the prediction and opinion methods and between students stratified by 4 potentially biasing variables: gender, estimated general level of achievement, expected test result, and satisfaction after having completed the exam. For each of the latter three

variables, we compared the evaluation outcomes of high and low scoring students.

Results: The overall response rates ranged from 70% at the University of Groningen (third-year students) to 95% at McGill. The prediction condition required significantly fewer respondents (on average 26–28 respondents) than the opinion condition (on average 67–79 respondents) across all samples (p<.001), while the outcomes achieved were fairly similar. In the opinion condition, bias was found in 4 out of 12 comparisons (4 potentially biasing variables at 3 sites), whereas in the prediction condition bias was found in only one comparison.

Discussion: Our study supports previous findings that prediction methods require significantly fewer respondents to achieve results comparable to those obtained through traditional methods of course evaluation. Moreover, we found further support for the hypothesis that prediction responses are less subject to bias than traditional opinions.

Conclusions: Our findings lend credence to prediction as an accurate and efficient method of course evaluation.

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10G/4
How to evaluate the role-play of simulated patients: development and validation of a new questionnaire

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Introduction: Simulated patients are successfully integrated in education at many medical faculties. Yet only few studies address the quality assessment being crucial for the outcome.1 The reliability and also the validity of an OSCE depends on the examiner rating and on the highly standardized role-play of the simulated patient. Our research questions were: What are the criteria of an authentic role-play of simulated patients in an OSCE? How is it possible to operationalize these criteria in a short questionnaire to be able to assess the role-play of simulated patients? Does the developed questionnaire fulfil the requirements of reproducibility, validity and reliability?

Methods: We developed and validated a tool to assess the quality of simulated patients' role-play and wanted to have the chance to ensure and increase its quality. In collaboration with experts, teachers, simulated patients and students we collected and prioritized criteria of good role-play and operationalized them into a 3-subscale (communication, information and realism) questionnaire. The questionnaire was completed with a global rating, a field for recurrent

observation and a commentary field. The questionnaire was applied in 2 pre-tests. In pre-test 1 18 raters and in pre-test 2 18 other raters used the questionnaire for 5 video role-plays (history taking, physical examination, breaking bad news, patient management and psychiatric history taking). All raters have been trained in OSCE rating and in questionnaire use before. After the first pre-test the items were refined and the subscales improved by changing items between them. The final questionnaire was validated during a real OSCE (34 questionnaires for history taking, 47 questionnaires for physical examination and 8 questionnaires for patient management) in parallel use with the already validated MaSP questionnaire2. All examiners had trainings for the MaSP questionnaire, our questionnaire and the OSCE rating before.

Results: In pre-test 1 the Cronbach's alpha of the subscales were 0.79 for communication, 0.58 for information and 0.90 for realism. Pre-test 2 showed a intern consistency of 0.78 for communication, 0.82 for information and 0.84 for realism. The reliability of 89 final questionnaires from OSCE was analysed. Cronbach's alpha was 0.86. MaSP2 reliability was 0.63.

Analysis of subscales revealed a Cronbach's alpha of 0.77 for communication (5 items), 0.85 for information (4 items) and 0.69 for realism (7 items). History taking showed a Cronbach's alpha of 0.53, physical examination 0.86 and patient management 0.66.

Discussion: We have been very satisfied with the results of pre-test 1, but refined some items. We deleted one item and changed the information subscale extensively. As shown in pre-test 2 we have been successful thereby. We defined the appropriate criteria of an authentic role-play of simulated patients, operationalized them in the right way and created a valid tool and reproducible ratings. The questionnaire is a highly reliable tool to assess the quality of simulated patients' role-play and offers new possibilities in quality management. The appropriateness of our questionnaire for different types of role-play may be a possible limitation.

Conclusions: Simulated patients should be assessed to evaluate the quality of their role-play and to enhance quality individually.

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10H Short Communications: Staff Development

10H/1
Which is best? A programme taught synchronously on-line or on-campus?

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Background: In 2009, The University of Glasgow introduced a Masters programme in Health Professions Education. This taught programme is remarkable for having two modes of delivery; on-line and on-campus, and students may choose one or 'flip' between the two according to their schedule. Participants were full time, part-time, UK based and overseas.
Summary of work: In 2011, a detailed evaluation of students (n=22) to compare the efficacy of the two modes was carried out, using a 24-item self-reporting satisfaction questionnaire (5-point Likert scale) and a semi-structured interview undertaken by a neutral researcher. Questions asked about, demographics, information provided, organisation, delivery, assessment, interaction and involvement, relevance, overall satisfaction. Analysis considered gender, location, mode, and factorial analysis of themes. The data were analysed using SPSS and content analysis.
Summary of results: The global results showed a high level of satisfaction with both modes and all aspects of the programme, with tutor-satisfaction being the most significant aspect. In general, participants preferred the on-campus sessions for ease of interaction, but the on-line mode was more than acceptable for those who could not attend on-campus.
Conclusions: Synchronous teaching on-line is worthwhile and beneficial for students at a distance, but technology should not replace conventional on-campus sessions for full-time or local students.
Take-home messages: Synchronous teaching on-line or conventional sessions on-campus are valued but the quality if the tutor is paramount.

10H/2
Five Year Retrospective Evaluation of the Innovative Masters in Medical Education at KSAU-HS in Saudi Arabia

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Background: In 2007 the COM at KSAU-HS initiated an innovative Masters in Medical Education, unique to the Kingdom and most of the Arabic Middle East. Now in its sixth year, with a highly experienced international faculty of 12-14 onsite and 15-20 visiting/online, the program has had overwhelming success, matriculating 100 postgrad health professionals, 95% completion rate. Based in Riyadh and Jeddah, it averages 200 applicants annually, selecting 20-25. The two-year, leadership-oriented program contains nine blocks over the first three semesters, with project/thesis in the fourth. Students represent all areas of health, half from

medicine, both genders, several universities and hospitals, and MOH.
Summary of work: The rich curriculum, quality faculty, and varied techniques used in the program are described/evaluated, including PBL, group projects, lecture-discussions, seminars, SKYPE interactions, research projects, workshops, examinations, and thesis.
Summary of results: Comprehensive Program Evaluation is conducted on every course. Summaries of results and chief findings from a Five-Year Retrospective (2011-12) are presented.
Conclusions: Recently characterized by an accreditation visit team as "one of the Kingdom's best kept secrets", graduates have assumed high posts in their respective institutions, many receiving promotions.
Take-home messages: Past accomplishments and present and future challenges are discussed.

10H/3
A competency framework for faculty in postgraduate medical education

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Background: Aiming to improve quality and outcome of postgraduate training, legislation in the Netherlands has recently changed. Appropriately trained staff is a prerequisite for successful implementation of innovations in clinical education. To set goals for learning in faculty development programs (FDPs) and to create standards for quality assessment of faculty, we developed a competence framework (CF) tailored to these purposes.
Summary of work: Based on existing models and in accordance with current regulations a compact CF has been developed. Observable behavioral indicators were formulated. The validity and usefulness of the CF were re-iteratively discussed with experts (n=20), and with providers of FDPs (n=8).
Summary of results: The proposed CF includes (1) basic competencies, (2) competencies required for clinical supervision, work-based assessment and quality improvement, (3) advanced competencies for program directors including leadership skills. Testing its usefulness suggested proof of concept. It is appreciated because it reveals strengths and gaps in current FDPs.

Conclusions: This compact CF for faculty development in postgraduate medical education appears useful for faculty development and for quality assurance. It therefore supports innovation and improvement of postgraduate training.

Take-home messages: Successful implementation of innovation and quality improvement in postgraduate education require defined competencies of faculty, supporting these goals.

10H/4
Training design quality and didactic methodology used by teachers accredited for their professional skills in Andalusia

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Background: The Andalusian Agency for Healthcare Quality launched the Acrreditation of Continuous Training Activities in 2003 which assesses, among others aspects, the didactic methodology used. The Health Professional Skills Accreditation began in 2006. It includes the assessment of the professional's teaching capacity.

Summary of work: Analysis of the training design quality and, specifically, of the methodology, depending on the participation of teachers accredited for their professional skills or not. Timeframe: 2006-2011. Variables: teachers accredited for their professional skills, methodology assessment, training design quality (CCL).

Summary of results: Between 2006 and 2011, 16709 training activities have been accredited. In 5160 of them, at least, one accredited professional has taken part as a teacher (30.88%). In the activities with accredited professionals, the average of CCL is 1.81 out of 2.8, and the average of the methodology is 0.22 out of 0.4. In that activities in which accredited professionals haven´t taken part as teachers, the average of CCL is 1.73 and the methodology, 0.19.

Conclusions: The training design quality (CCL) is better in the activities in which accredited professionals have taken part as teachers than ones not have take part. The assessment of the methodology increases in activities with accredited profesionals.

Take-home messages: The participation of the accredited professionals improves the design quality and the didactic

methodology of the training activities in which they are involved.

10H/5
An interprofessional initiative in development of a workshop on teaching and assessment for post-graduate trainers

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Background: Trainer selection for non-consultant hospital doctors has been based on clinical expertise. Existing and prospective trainers require support in educational roles. Clinicians need awareness of educational and assessment theory. Initiatives in undergraduate faculty development may be translated to post-graduate trainers.

Summary of work: Education development in RCPI collaborated with teaching trainers in Physiotherapy and Medicine. Learning Objectives were agreed. Focus groups were conducted with trainers to identify perceived challenges. SImulated videos of challenging scenarios were made. Workshop attendees received: educational "glossary", sample teaching schedules, "top tips" in feedback/assessment, summaries of teaching;feedback, and assessment methodology. Workshops are ongoing. A post-workshop questionnaire was provided to all attendees.

Summary of results: 18 trainers attended workshops to date. 15 questions were returned, on which Eval report was generated. Free-text comments indicated positive evaluation: "an excellent programme", "it addressed many issues that we deal with in common clinical practice2. 88% of respondents agreed objectives were met. 100% agree the course was relevant to current role. 89% agreed they would recommend course to a colleague. 100% agreed they could apply what they had learned.

Conclusions: Collaboration among educationalists and clinicians can provide effective and time-efficient essential skills for trainers.

10H/6
Improving Clinical Teaching in Veterinary Medicine through Faculty Development: Results from Student Assessment and Self-Assessment

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Background: Faculty development programs commonly rely on participants' self-assessments to measure training impact. Because student ratings have recognized value for teacher evaluation, we supplemented self-ratings with student ratings of teaching performance to measure the impact of the Stanford Faculty Development Program in Clinical Teaching (SFDP).

Summary of work: In February 2011, veterinary teachers at the Swedish University of Agricultural Sciences, Uppsala were trained in a slightly modified SFDP. Nine teachers volunteered for the training and 14 teachers were in the control group. Student ratings of teaching performance on a 29-item instrument were gathered from 65 veterinary students four weeks before and after the training. Students were blinded to group assignment. SFDP-trained teachers completed a similar post-training self-assessment.

Summary of results: Students' mean ratings (SD) of SFDP-trained teachers were 3.47±0.34 before and 3.80±0.26 after the seminar series (p=0.006). Students' ratings of the control group were 3.68±0.34 and 3.73±0.46, respectively (p=0.63). Faculty self-ratings indicated significant increases in positive teaching behaviours (p<0.001).

Conclusions: Both student ratings and self-assessments indicated a positive impact of the SFDP on teaching behaviours in the veterinary education setting.

Take-home messages: Either self-assessment or student ratings may be useful when evaluating the impact of faculty development programs.

10I Short Communications: The Curriculum and Curriculum Mapping

10I/1
Multi-Dimensional Curriculum Mapping from theory to reality (an Informatics based approach)

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Background: Much attention has been paid in medical education to curriculum planning and development. The curriculum is a sophisticated blend of course content, teaching and learning methods, learning opportunities, learning outcomes, timetabled courses and assessment. The use of curriculum maps to visualise and show the relationship among these different elements has been neglected. Past efforts, due to the complexity of mapping, have been directed towards simple two dimensional matrix blueprints.

Summary of work: Utilising the advances in technology, informatics and thinking in medical education, an approach to curriculum mapping has been developed that visualises and communicates the complex relations among the different dimensions or views of the curriculum.

Summary of results: Preliminary studies using the curriculum map with the new medical curriculum at the Al-Imam Medical College, Riyadh, Saudi Arabia have demonstrated that the approach to curriculum planning proposed can be adopted in a medical curriculum and has significant potential benefits.

Take-home messages: Curriculum maps can be developed which make the curriculum more transparent to all the stakeholders and which are of value to staff in planning the curriculum, to teachers in delivering the programme and to students in directing their studies.

Acknowledgements: College of Medicine in Imam Mohammad Bin Saud, Riyadh, Saudi Arabia for taking the lead in implementing such an innovative approach in curriculum mapping.

10I/2
Mapping progress in medical education

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Background: Giving guidance to health professions trainees as they navigate through their course of study is a key success factor to achieving desired outcomes. Providing a map to enable efficient transit from their starting point to the next stage of their journey facilitates many things, including self-directed learning. The document can also help harmonize learning opportunities they are provided with by the many educators they encounter along the way. With the map, educators can see where trainees have been, where they should be, and where they are headed to next and so tailor their teaching.

Summary of work: At the National University of Singapore, a systematic approach to creating the map is underway. The use of milestones and entrustable professional activities that have been developed for use in graduate medical education in the USA have been adopted, adapted, and extended into the undergraduate realm to facilitate a smooth transition along the continuum of learning. A standardized tool for mapping has been developed for application across all clinical specialties.

Conclusions: Implementation is proceeding apace, and next steps of vetting the map with the graduate medical education community and of using the map to ensure alignment and rationalization of the entire undergraduate curriculum are planned.

10I/3
Do we have a nautical chart? Designing a whole picture on medical education competences

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Background: While various seminars and workshop on medical education have widely been distributed for diverse needs and medical teachers, such activities tend to be provided without an image of whole pictures on medical education because of its broadness.
Summary of work: Based on the literature review, maps (blueprints of medical education competences) were designed for both workshop planners and medical teachers of these seminars and workshop. To evaluate its validity and utility, 263 nation-wide workshop and seminars provided by Gifu University Medical Education Development Centre from 2002 to 2012 were applied and discussed.
Summary of results: A map of medical education was developed with what consisted of the teachers' competencies, its developmental stages and number of learners. Group discussion revealed that a map for medical teachers would not only encourage a self-assessment but also illuminate the next learning. A map for workshop planners was thought to shed light on a gap between needs and contents provided and how to construct an effective workshop.
Conclusions: Whole maps on medical education competences can be useful to navigate to the further learning and future planning of seminars and workshops on medical education.
Take-home messages: Maps of medical education competences should be demonstrated more in each institution and context.

10I/4
Undergraduate Medical Education Program Curriculum Renewal: Mapping Objectives

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Background: Memorial University (MUN) initiated plans for renewal of its MD Program in 2008, with four principal design features: • Spiral sequence with 4 Phases: Health and its Promotion; Disruptions to Health/ Disease Prevention; Diagnosis/ Investigation of Illness/ Disease; Integration into Practice; • Presenting feature stories; • Core curriculum plus options; • Academic half day.
Summary of work: Key processes in developing this curriculum to date include: • Mapping of competencies and learning objectives from the current curriculum and national objectives to phases and stories; • Grouping and sequencing of mapped competencies and learning objectives; • Assignment of grouped and sequenced competencies and learning objectives to teaching/learning and assessment methods.
Summary of results: The "culling" process of competency and objective selection, elimination and ultimately mapping with assignment to teaching/learning methods involved over 27% faculty participation. Competency and objectives mapping to Phase 1 stories is complete, and objectives have been grouped and sequenced with assignment to teaching/ learning methods
Conclusions: The journey in curriculum mapping for core curriculum is both rewarding and challenging.
Take-home messages: Facilitation, participation, and iterative mapping are important in developing a core curriculum.

10I/5
Integrated curriculum at a public medical college: Foundation Module experience at AJKMC Pakistan

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Background: Azad Jammu & Kashmir Medical College is the 1st public sector medical college in Pakistan to adopt an outcome based integrated undergraduate curriculum since its inception in 2011. To contextualize the training of future physicians and make Basic Health Sciences (BHS) instruction more relevant to the clinical practice; we introduced

integrated, system based Modular spiral curriculum at transdisciplinary level.

Summary of work: The foundation module (FM) was the 1st module delivered to the class of 2016 in Feb. 2012. Its outcome was to sensitize a diverse group of newly inducted students to professionalism, contemporary biomedical ethics, history of medicine, culture, diversity, sanctity of human body/tissue, information & communication technology, learning styles & approaches, small group dynamics, theories of learning, assessments, reflective writing, and legacy of muslim physicians. FM was evaluated by a semistructured questionnaire on a 5-point likert scale, having open ended comments column also.

Summary of results: Triangulation of quantitative & qualitative data revealed positive perceptions of students about FM and integrated curriculum. The responce rate of voluntary participants was 76%. 96% graded all sessions as good/excellent/outstanding; whereas 1% poor and 3% fair. Content analysis of qualitative data revealed following recurrent themes: Need for Foundation Module highly valued; Delivery of FM can be improved; Faculty is supportive; Logistics should be improved.

Conclusions: Foundation Module provided a road map for integrated curriculum and enhanced students motivation for self-directed life-long learning.

Take-home messages: Integrated curriculum can be implemented in a resource constrained environment; however, it demands a strong institutional leadership role.

10I/6
Integration of 12 discipline categories in basic sciences modules: A new level of integration in undergraduate medical education

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Background: Integration in medical curricula is still a growing trend in Saudi Arabia. Since its foundation in 2008, Al-Baha University Faculty of Medicine (ABUFM) is adopting an integrated Problem-Based, System-Based curriculum.

Summary of work: Curriculum of the preclinical phase was outlined in terms of map, intended learning outcomes and content areas. Several integrated curricula of national and international medical schools were benchmarked.

Summary of results: Ten horizontally integrated system-based basic sciences modules were developed. In addition, innovative seven themes were integrated longitudinally including community oriented and research. In each of the modules, 12 discipline categories were integrated. These 12 disciplines are: Fundamental Structure (Anatomy & Histology), Development (Embryology), Essential Function (Physiology), Biochemical Basis (Biochemistry & Genetic),

Disease Grounds (Microbiology, Parasitology & Immunology), Disease Process (Pathology), Ethics & Professionalism, Public Health (Community Medicine), Language (Medical Terminology & Glossary), Disease Presentation (Introduction to Clinical Skills), Diagnostic Tools (Laboratory Medicine & Imaging) and Treatment Concepts (Pharmacology).

Conclusions: The experience of integration between conventional and innovative subjects into 12 disciplines and then into ten system based modules can be seen as a new applicable and worth studying level of integration in basic sciences modules.

Take-home messages: The new level of integration at ABUFM is primarily promoted to act as a role model for integration.

10J Short Communications: Topics in the Curriculum

10J/1
The relevance of undergraduate medical law education to clinical practice

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Background: The Monash University medical law tutorial program was implemented in 2001. A major aim of this program is to enable medical students to recognise and understand their legal obligations in clinical practice thereby improving clinical standards and contributing to better patient outcomes.

Summary of work: The present study examined whether from a graduate perspective, Monash University's medical law tutorial program provides adequate legal information of relevance in a clinical context. Monash medical graduates from 2006-2009 who were working at a Victorian hospital, or who were members of the Royal Australian College of General Practitioners were invited to participate in the study in 2011.

Summary of results: Sixty-two participants completed the survey. Participants thought it is more appropriate to teach medical law in the latter years rather than the formative years of the course. Overall, participants had positive perceptions of the medical law program when they rated various statements regarding the program.

Conclusions: The medical law program is an essential component of students' medical education and provides information relevant to future clinical practice.

Take-home messages: All medical schools should ensure that their medical course contains a medical law program and evaluate its relevance to clinical practice on a regular basis.

10J/2

Situational analysis of palliative care education in Thai medical schools

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Background: Thai Medical School Palliative Care Network conducted this study to establish current situation of palliative care education in Thai medical schools.
Summary of work: Questionnaire survey was given to 3 groups including final year medical students, instructors, and medical executives in 16 Thai medical schools. Questionnaire asked about 3 areas of palliative care education.
Summary of results: Students did not learn much about 4 areas including non-pain symptoms control (50.0%), goal setting and care planning (39.0%), teamwork (38.7) and pain management (32.7%). Top 3 influences of palliative care education to medical professionals from students and instructors were improving quality of care, professional competence and professional responsibilities. There were 53.4%, 30.9%, 8.3% of students confident to provide palliative care services under supervision of their senior, able to provide by their own and not confident to provide palliative care services, respectively.
Conclusions: Students did not learn much about important areas which are recommended by European Association of Palliative Care. Majority of students confident to provide palliative care services under supervision.
Take-home messages: To prepare students to achieve a basic level of competency in palliative care, each medical school has to carefully put palliative care contents into undergraduate curriculum.

10J/3

Exploring Geriatric Teaching on Internal Medicine Teaching Units: Are We Rationing Geriatrics Out of the Curriculum?

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Background: Despite a looming demographic imperative, clinical rotations in geriatrics are not mandatory in North American undergraduate medical training. This is based on the rationing premise that, given curriculum time pressures, medical students acquire geriatric competencies in other clinical rotations.
Summary of work: We examined clinical and teaching discussions on the Internal Medicine Clinical Teaching Unit (CTU). Focusing on the admission case review and discharge summary, we asked: 1) what medical issues are emphasized when the CTU team cares for older patients, and 2) what geriatric core competencies are addressed? Using a multiple case study approach, we analysed 15 cases of patients aged >65 admitted to one of three CTUs. Inductive analysis of medical issues emphasized during review was followed by a comparative analysis of geriatric content with Canadian undergraduate geriatric core competencies.
Summary of results: Discussions focused narrowly on the patient's chief complaint and abnormal lab values. References to geriatric core competencies were infrequent.
Conclusions: While trainees regularly encounter patients with geriatric issues on CTU, these issues are rarely emphasized during case review. Future research will determine whether similar findings occur on other rotations.
Take-home messages: Study results challenge the suitability of current curricular rationing decisions pertaining to geriatrics teaching.

10J/4

How do we get Gender Medicine into medical education?

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Background: Gender Medicine, a cross-cutting medical topic, is a new development and a modern discipline that has increasingly established itself over the last 15 years. The question now is how do we get Gender Medicine into medical education?
Summary of work: Starting out on the legal basis for the inclusion of Gender Medicine in medical curricula varied strategies, analyses and methods were developed. The concept employed at Innsbruck Medical University was to integrate Gender Medicine as a compulsory part of the existing curriculum and examinations, to seek broad cooperation with all medical disciplines and to conduct ongoing further development of the teaching plan.
Summary of results: Meanwhile, Gender Medicine is offered as a compulsory subject and a popular elective. It is accepted in routine medical practice. We learned that it was necessary to establish Gender Medicine as a compulsory subject for it to be taken seriously as a new discipline.
Conclusions: On the one hand Gender Medicine is taught as a separate discipline, while on the other hand it continues to develop as a topic that cuts across all disciplines. Thus, in the middle term it may be necessary for Gender Medicine to be

its own organizational unit, but in the long term it should be an integral component of all medical disciplines.

Take-home messages: Gender Medicine must be a natural part of the regular curricula for all medical and nursing training programs. To guarantee that this cross-cutting subject is integrated into all disciplines, it will first have to be its own department with its own resources.

10J/5
Using the humanities to facilitate patient and population based learning: the evidence from two integrated curricula

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Background: The increasing emphasis on patient and population centred medicine has highlighted the role of the humanities in educating clinicians with a holistic, ethical and 'humane' approach to practice and professionalism.
Summary of work: Within a collaborative team of clinicians, educators, patients and humanities/public health practitioners, we have employed the arts, classics and dramatic techniques to help students hone their clinical and empathic skills when working with patients, in core medical and dental curricula.
Summary of results: Student and patient narratives, clinician and practitioner feedback, and a series of audio-visual illustrations, demonstrate not only how the humanities can be used to great effect in meeting the aims of population and patient-centred policies, but also how inter-agency collaboration can break down boundaries to achieve such goals.
Conclusions: The collaboration of clinicians, patients, students and humanities/public health educators is not only desirable, but crucial to developing meaningful patient-population based and clinically-relevant curricula.
Take-home messages: Clinical educators have recognised the role of the humanities in developing empathy, ethical sensitivity and professional integrity. We encourage the development of collaborative networking to inform educational innovation and to evaluate the impact of humanities in patient and population based learning.

10K Short Communications: Reflection and Critical Thinking

10K/1
Evaluation and development of reflective practice throughout a medical school curriculum: tutor performance and growth into clinical years

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Background: Reflective group practice through small group tutor facilitation has provided an opportunity to focus upon personal and professional activities through discussion of relevant learning objectives, and clinical placement experiences.
Issues that have been raised in this evolution include: student acceptance, programme delivery style, tutor cynicism, student's failure to read designated articles, and tutor's own philosophy and teaching intention. A clinical year's pilot project has commenced in 2011/2012, with an emphasis on case presentation and discussion of ethical and professional dilemmas.
Summary of work: Pre clinical years research examined why there is wide tutor variability in achieving stated outcomes and why some PBL cases appeared to work well and others didn't. Data examined was centred on: professional development benefit, achievement of learning objectives and usefulness of resource material.
Clinical year's reflective programme was checklist evaluated to help identify programme effectiveness and student satisfaction.
Summary of results: Pre clinical results suggest high variability in tutor facilitation with consequent effects on valuing. Checklist evaluation of reflective practice in clinical years suggests timing, case complexity as well as tutor facilitation were critical variables.
Conclusions: Stability and consistency of tutor approach appear essential in pre clinical curriculum. Clinical year evaluation suggests greater factor complexity.
Take-home messages: Main implications for practice include:
• Appropriate criteria, selection and training of reflective practice tutors essential; • Reflective practice goals articulated clearly and accepted : staff and students; • Individual and performance tutor feedback critical; • Need for a gradual, evolving and accepted reflective programme across pre and clinical years.

10K/2
Experiences from Reflective Writing and Personal Talks in medical training

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Background: Reflective capacity and self-knowledge are important aspects of medical professionalism. Reflection and Reflective writing plays important roles in achieving this.

Summary of work: During a course in Medical Psychology, 3rd year medical students, on their last pre-clinical semester, wrote reflecting letters to one teacher, relating their life experiences and thoughts to psychological concepts presented during the course. The student met the teacher for a personal talk, at the end of the course, for a joint reflection.

Summary of results: During three semesters 259 of 280 students answered the course evaluation form. On questions whether "writing reflective texts" and "participating in a personal talk" had increased their self-knowledge, 96 % and 92% of the students, respectively, agreed wholly or partially. Comments included: "It was very interesting and usefully even if it was a bit unpleasant to reflect about oneself" and "Finally an opportunity to reflect!" Qualitative themes in the letters included: Finding reflective writing beneficial yet challenging; experiencing a sense of having grown as a person.

Conclusions: Reflective writing combined with personal talks seems to be an important part in relation to self-perception and a complement to scheduled group discussions during medical training.

10K/3
Reflection on clerkship experiences at VU University Medical Center: topics and appreciation

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Background: The importance of reflection in medical education is widely acknowledged. Still students often show resistance to reflection. At VUmc, Amsterdam, the curriculum comprises a line of reflection classes, leading up to seven compulsory small group sessions during senior clerkships (years 5 and 6).

Summary of work: After each session (n=31) the topics, brought up by students, were provided by the teacher and classified by two raters. The clerks (n=173) filled out a questionnaire on usefulness and joyfulness and on safety of the setting.

Summary of results: Prominent topics were concerns about responsibility and errors, future careers, climate on wards (supervisors), need for assertiveness, emotional experiences (death), and professional / personal growth. Mean scores of the questionnaire on 1-5 Likert-scale: - 'hearing colleagues experiences:': 'usefulness': 4.0; 'joy': 4.3.; - 'discussing own experience': 'usefulness': 3.7; 'joy': 3.9; - 'safe climate': 4.4. Main scores for both 'usefulness' and 'joy' of 'colleagues experiences' were higher (Mann-Whitney; p<0.05) compared to 'own experience'.

Conclusions: Clerks experience reflection classes as safe, and find reflection on experiences joyful and useful. There is some

preference for discussing other people's concerns, suggesting that sharing and recognition ('I'm not the only one') are essential elements of reflection in small groups.

10K/4
Critical thinking for beginners

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Background: In the "European Core Curriculum for Medicine – the Student Perspective" the European Medical Students' Association (EMSA) as well as the Bundesvertretung der Medizinstudierenden in Deutschland (bvmd) structured the core curriculum in nine domains. One of these is "critical thinking".

Summary of work: An expert panel developed a curriculum for two day courses in critical thinking. The start was an analysis of visual perception in the realm of magic. This was followed by definition of items, basic logic and exact argumentation with several exercises; we broached the issues of causation and chance, fallacies and biases and study design. Dilemmas and paradoxes illustrated the boundaries of our thinking. At the end of the course students analysed individually the prisoner's dilemma as an assessment. Not the result, but the strength of argumentation was the main objective.

Summary of results: During a three semester period 182 1st semester students (19% of all eligible students) chose these courses as an elective. 92% gave a positive evaluation and 77% asked for a sequel. About half of the participants yielded a good assessment.

Conclusions: 1st semester students enjoyed critical thinking courses and developed a subjective feeling that the profited by participation.

Take-home messages: Critical thinking is integral to all aspects of doctor's role and should be taught in the medical curriculum.

10K/5
The effects of education models on critical thinking in nursing schools; comparison of integrated, problem-based, and classical education models

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Background: The traditional nursing process becomes insufficient with the rapid changes in health care. Nurses are expected to make more clinical decisions that provide

optimal patient care. Therefore the study was carried out to analyze which education model gives a more comprehensive and holistic way of arriving at decisions which are called critical thinking.

Summary of work: A cross-sectional survey was conducted of 390 students of three different geographical Nursing Schools in the province of İzmir (located in west of Turkey), Sivas (mid Anatolia) and Adana (Mediterranean) in Turkey. Adana is following a classical curriculum, İzmir is PBL and Sivas is following an integrated curriculum.

Summary of results: The results showed that there was statistically significant difference between the models according to students' CCTS(p=0.029). The percentage of nurses, whose levels of critical thinking are high, is higher in PBL and Integrated groups than those of the classical group. There were significant differences between groups according to the sub-scale scores open-mindedness, truth-seeking, systematicity, inquisitiveness, analyticity and self-confidence. Gender, grade, socio-economic and educational status of the family, were used in multivariate logistic regression analyses. Correlation between CCTS and students' activity, academic success, self esteem (Rosenberg's Self-Esteem Scale was used) were analyzed also.

Take-home messages: Educational models are able to improve the critical thinking.

10L Short Communications: Education Research

10L/1
Applications of Cognitive Load Theory in Medical Education

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Background: Cognitive Load Theory (CLT) aims to develop instructional design guidelines based on a model of human cognitive architecture. Three types of cognitive load are distinguished: intrinsic load is a direct function of the complexity of the performed task and the expertise of the learner; extraneous load is a result of superfluous processes that do not directly contribute to learning, and germane load is caused by learning processes that deal with intrinsic cognitive load.

Summary of work: This paper provides a systematic review of applications of CLT in the field of medical education.

Summary of results: Applications are mainly found in the field of visual representations (instructional animations, 3D images) and simulation-based training. The use of guidelines to decrease extraneous cognitive load, such as integrating different sources of information and using multiple modalities, is most prominent in the design of visual representations. The use of guidelines to lower intrinsic cognitive load, such as simple-to complex ordering of scenarios and working from low- to high-fidelity, is most prominent in the design of simulation-based training.

Conclusions: Applications of CLT in medical education are beginning to appear, but only a limited set of guidelines is used so far.

Take-home messages: CLT is used for the design of visual representations and simulation-based training but its potential applications are much broader.

10L/2
The Future of Publication in Medical Education

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Background: Changes in scholarly publishing have compelled the medical education community to reexamine the future definition of the scholarly publication.

Summary of work: The Editors of Academic Medicine and MedEdPORTAL speculate on the future of the medical education publication through a thought experiment designed to distill a scholarly work into its most elemental components.

Summary of results: Using the process of abstraction, traditional notions of scholarly publishing were reframed by asking: What does it mean to publish a scholarly work? What is the future unit of publication? What are the minimum essential components of a publication? Will the term "publication" be a useful designation in the future? How will we assess scholarly impact in the future?

Conclusions: It is important to consider the degree to which the prevailing notion of scholarship is tied to the publication medium versus the content of a scholarly work or the extent to which the work contributes to the marketplace of ideas. As scholarly publishing continues its transformation, decision makers will need to reexamine value systems and reward structures tethered to traditional forms of scholarship.

Take-home messages: The process of abstraction will enable the community to envision a new future for scholarly publications.

10L/3
Major journals publishing medical education articles address different key topics

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Nancy Tannery (*University of Pittsburgh, Health Sciences Library, Pittsburgh, United States*)
Julia Whelan (*Harvard Medical School, Countway Library, Boston, United States*)
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Background: Placing one's manuscript appropriately can expedite publication.

Summary of work: MEDLINE retrieval via medical subject headings (MeSH) was used to analyze patterns of medical education (ME) publications from 1960-2011. Patterns of publication were analyzed by comparing the proportion of topics within each journal to the overall proportion across all journals. The most differing topics were analyzed within 3 high impact journals: Medical Education (MedEduc), Academic Medicine (AM), JAMA.

Summary of results: 3,869 journals published 81,531 ME articles. What each published differed. MedEduc, AM and JAMA barely overlapped in their foci. While AM and MedEduc shared their top differing topic, "undergraduate medical education (UME)", publishing UME significantly more than other journals, JAMA published UME less than average. Other highly differing

ME topics by journal were: curriculum, academic medical centers (AM); economics, physicians (JAMA); educational measurement, teaching (MedEduc). The greatest differences in below average frequency in ME topics were: continuing medical education (AM); UME and teaching (JAMA); internship/residency (MedEduc).

Conclusions: Meaningful differences among journals' topics exist despite an overall interest in medical education. Frequently published subtopics do not necessarily appear with equal frequency in all high impact journals.

Take-home messages: Authors should consider importance of their topic to a journal and its readers prior to submitting manuscripts.

10L/4
Conceptions of teaching in the literature compared and synthesised with those expressed by medical education experts, postgraduate trainees and students

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Background: There is evidence that individuals conceptualise teaching in different ways, and that such conceptions influence their approach to teaching and also the learning of those taught. Faculty development strategies often deliberately seek to influence participant conceptions of teaching.

Summary of work: Following ethical approval, eighteen experts in medical education, nineteen junior doctors and twelve final year medical students were asked what the term 'teaching' meant to them. Survey, interview and focus group methods were used. Responses were analysed with line-by-line then focused thematic coding. Resulting themes were

mapped to twenty four conceptions of teaching identified in the literature.

Summary of results: Themes emerging from the expert, junior doctor and medical student responses mapped to sixteen, eight and nine conceptions of teaching respectively. The conception of teaching as 'generating enthusiasm' also emerged as a theme from all three groups but was not identified in the literature.

Conclusions: The results were synthesised into a framework of twenty five conceptions of teaching, many more than in previous studies, which has considerable potential as a tool for faculty development and for further research.

Take-home messages: This research offers a comprehensive overview of conceptions of teaching in the literature, and a detailed exploration of how teaching is conceptualised by those involved in medical education.

10L/5
Towards a lexicon of commonly-used medical education terminology

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Background: Many commonly-used medical education terms are ambiguously defined, and carry different meanings among stakeholders. This adds complexity to collaborations, and causes confusion within the profession and among the public. We set out to create a lexicon of common terms to enhance consistency and portability among medical education stakeholders.

Summary of work: We identified a list of terms by conducting an environmental scan, a literature review, and a survey of national and international stakeholders. A national task force involved collaboration with various medical education stakeholder groups and international input. Using a modified nominal group technique, the task force debated definitions for each term over a series of teleconferences and online contacts.

Summary of results: A total of 95 stakeholder groups from Canada and international jurisdictions were contacted during the initial survey, with a response rate of 28%. The task force was comprised of 29 experts and one expert facilitator. Six rounds of consultation took place, during which consensus was achieved on 56 terms and definitions; 46 definitions were recommended for broad-based acceptance and 10 for removal from the medical education lexicon.

Conclusions: Broad-based acceptance of the terms and definitions included in this lexicon will allow stakeholders to

use and define terms consistently across organizations and borders.
Take-home messages: This lexicon will clarify discussions and advance the field of medical education.

10L/6
The Society of Education in Anaesthesia UK (SEAUK) medical education research priority setting exercise

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Background: SEAUK is the only UK specialty specific medical association solely dedicated to improving postgraduate medical education and training. Like many societies a small amount of SEAUK funds was given to educational research. The funds were awarded by merit of the individual application and no research was commissioned. The funds are from member's subscriptions and their opinion was sort about which medical education questions they believed needed answering.
Summary of work: An e mail survey of all members was devised. The initial results from the survey are being used to further develop the themes with those that volunteered to be contacted further.
Summary of results: The responses (430 questions) from 88 members were grouped into themes. The three themes that most questions grouped into were simulation, assessment and teaching/learning skills.
Conclusions: We are now funding projects aligned with our member's views. We are exploring the possibility of commissioning research projects. In addition we are looking at joining with other funding sources to achieve larger scale mutually beneficial quality education research.
Take-home messages: An educational research priority exercise should be performed by all stake holders that invest in medical educational research at local, national and international levels.

10M Short Communications: Social Media and Wikipedia

10M/1
Facebook and professionalism: What healthcare students see and do online

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Background: While social media offers a means to increase the ease of communication in healthcare education, it also poses new problems with regard to professionalism, confidentiality, and privacy. This study explored attitudes about online professionalism in those engaged in health professions education.
Summary of work: Medical students and faculty (n=14) participated in semi-structured interviews, and health sciences education students and faculty (n=750) completed a survey.
Summary of results: 40% of respondents confirmed they were aware of a colleague posting unprofessional material online; 21% admitted that they themselves have made posts or comments that appear inappropriate in hindsight. Examples of inappropriate peer-posted and self-posted content included: critical comments about professors, patients, or work environment; references to alcohol consumption; violations of patient privacy; descriptions of critical medical mistakes. 85% of respondents believed that their colleagues would benefit from some form of guidelines relating to the professional use of social networking software, but only 67% felt they themselves needed guidelines.
Conclusions: These results suggest that online professionalism breaches occur commonly in among healthcare students. Self-awareness appears to be lacking among these students.
Take-home messages: Guidelines relating to the use of social networking software have the potential to raise awareness of this issue and to reduce the impact of such professional lapses.

10M/2
How do medical students use Facebook for educational purposes?

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Background: Facebook is a social networking facility with over 800 million users worldwide. Medical students use Facebook to interact with one another, both socially and educationally (Sanders et al, 2008). This study seeks to investigate how medical students use Facebook to support their learning. In particular, it will identify the nature of the educational content that students post, and detail their attitudes and experiences of using Facebook.
Summary of work: Ten pilot interviews were conducted to assess feasibility of the study and generate basic themes. For the main study, undergraduates who use Facebook will be invited to participate in either a semi-structured interview or focus groups to explore these themes further. A grounded theory approach (Glaser & Strauss, 1967) will be used to identify themes from recorded transcripts data.
Summary of results: The pilot work indicated some common experiences of collaborative and peer learning mediated

through Facebook. Data gathered from the main study will generate further insight into the medical students' true experiences of Facebook.

Conclusions: Previous research suggests that Facebook has become a tool for learning across medical school culture. This study will illustrate if and how Facebook encourages collaborative learning between students.

Take-home messages: Knowledge about how medical students really use social media will inform educators both how best to exploit e-learning resources for collaborative learning and to advise students how best to make the most of online study groups.

10M/3
Facebook not only for chatting

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Background: Current students grew up in an electronic world, so they have unlimited opportunities to access information in a fast and efficient way; but, what about teachers from the previous generation? Are they missing the opportunity to support their educational activity with innovative methodologies? Considering Facebook advantages as a social network; especially its coverage, versatility as well as the fact that is free, we jump into the adventure to use it as a tool for a Faculty Development course.

Summary of work: We design, using FACEBOOK, the on-line course Strategies to develop Clinical Reasoning in preclinical courses. It lasted 12 weeks, during which participants had not only to design the six strategies recommended, but also to apply them in their course and share their experiences with the other participants.

Summary of results: Besides the competencies related directly with the course, participants learned to discuss in forums, upload and download documents, photos and videos; but especially they realize the possibility to use Facebook for their own on-line courses.

Conclusions: On-line Faculty Development courses aid professors to master competencies related with the use of electronic tools.

Take-home messages: Facebook is an ideal tool for teachers' training and for developing their skills to use electronic media.

10M/4
Wikipedia as a Medical Resource: Questionnaire assessment of Medical Student Use and Views

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Background: Wikipedia, the free online encyclopaedia, has over 23,000 medical articles. Its breadth and global popularity combined with its open-edit policy have prompted discussion of its role in medical education. Few empirical studies have assessed how medical students use Wikipedia; characterisation would help understand its current role within medical education.

Summary of work: Printed questionnaires were distributed to 1064 Imperial College London medical students. Questions assessed frequency and reasons for use. The accuracy and usefulness of Wikipedia as an educational resource were rated alongside textbooks, lectures and other medical websites.

Summary of results: Of 452 respondents, 425 (94%) reported using Wikipedia as a medical resource. The most commonly selected reason for use was to look up new facts or terms. Wikipedia's mean accuracy rating (6.1/10) was lowest amongst medical resources; its mean usefulness rating (7.4/10) was second only to lectures. Only 48 (11%) students reported always checking information obtained from Wikipedia.

Conclusions: Wikipedia is ubiquitously used by medical students. Although students rated Wikipedia as relatively inaccurate it was rated as highly useful compared to other resources, mainly due to factors related to convenience.

Take-home messages: Medical educators should discuss Wikipedia with medical students; the value students place on Wikipedia makes it feasible for its inclusion in medical curricula.

10M/5
Use of a wiki textbook to improve resources for veterinary education in low income countries

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Background: Much Brooke work centres around training local Brooke/non-Brooke veterinary professionals, historically support included a context specific manual produced by Brooke.

Summary of work: Veterinary resources for working equines are limited. Therefore a working equine veterinary manual was written by the Brooke for staff. Surveys revealed this to be valued and used. In May 2012 this manual was converted into an online wiki format to improve: • Access – all Brooke vets are registered; not all had a hardcopy. • Content – continually updated by all Brooke vets improving relevant information. Images from the field have illustrated content. • Evidence based- links to references. • Reduces costs - no printing and site is constantly updated.

Summary of results: Feedback from surveys /website analytics indicates the wiki manual is accepted and use

increasing. Site quality (indicated by the time of site usage and increased returning users) has improved.
The wiki form provides : • A unique up-to-date interactive learning resource : • A resource sharing context specific information internationally improving interaction: • Increased uptake by motivating vets through shared authorship/ownership

Take-home messages: Resources can be effectively shared online and increased contributors improve content. Future developments include quizzes/ virtual patients to improve engagement and access for non-Brooke veterinarians to meet strong demand.

10N Workshop: Achieving the maximum impact from simulation based training

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Background: Rapid technological advances have made it possible to develop tools to be used in all stages of professional development. Competencies range from basic psychomotor skills development to managing complex medical situations. The modalities include skill trainers, simulated patients, screen-based simulators, surgical simulators and patient (manikin) simulators. Learning objectives can be aligned to clinical skill expertise and to non-technical skills such as situation awareness, decision-making, communication, leadership and collaboration. The advantages of simulation based training are numerous: perhaps the most important is the ability to train in a safe learning without endangering the patient. The learning situation can be designed to address individual (or team) needs. The major limitations are the high costs and the need for qualified instructors.
Intended outcomes: After this session, the participants will be able to: 1. Describe how different types of simulation modalities can be used to achieve the maximum impact 2. Select the right training tool(s) for a given learning objective 3. Combine simulation modalities to optimise learning
Structure: This 90 minute session will include mini-lectures, video clips and group exercises.
Who Should Attend: participants with an interest in simulation based training.
Level of workshop: Intermediate.

10O Workshop: You CAN use the objective structured clinical examination (OSCE) to assess interprofessional education competencies

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Background: Interprofessional education (IPE) involves different professions learning about, from and with each other to promote collaborative practices, facilitate teamwork and improve patient/client care. IPE competency frameworks describe the knowledge, skills, behaviours and attitudes necessary to achieve these goals. Assessing outcomes for IPE competencies is challenging as competency frameworks emphasize performance assessment. The objective structured clinical examination (OSCE), a performance-based examination, is often used to assess performance of individual learners but less frequently to assess IPE competencies in groups of learners. This workshop will focus on the role of the OSCE to assess competencies in IPE.
Intended outcomes: Participants will be able to describe an IPE competency framework; identify challenges in assessing performance in IPE; design OSCE scenarios that incorporate IPE competencies; plan an OSCE blueprint to assess multiple competencies relevant to different health professions and IPE.
Structure: Using didactic presentation and interactive discussion, this workshop will provide participants with skills to develop OSCE scenarios and blueprints relevant to IPE. Participants will learn how competency frameworks apply to IPE and how the OSCE can be used to assess these competencies. Participants will observe and analyze simulated OSCE scenarios and, in small groups, design and discuss OSCE scenarios that incorporate IPE competencies.
Who Should Attend: Educators interested in assessment, evaluation, competencies and IPE.
Level of workshop: Beginner.

10P Workshop: Methods for selection of medical students: why, what and how?

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Background: Arguably, the most important step in shaping the future medical workforce is the decision as to who gets admission to medical school. Students selected must have the aptitude to complete training, to be good doctors, and to go to careers that meet future health needs. Furthermore, as medical school selection is such a "high stakes" process, any process must be robust and defensible. The range of tools on which to base such important decisions is limited. Currently-used tools include measures of prior academic achievement, general cognition, personality, skills at interview or in observed tasks, personal statements and references. The cost-effectiveness of different selection tools is a consideration, as is how affirmative pathways are integrated into any process.

Intended outcomes: Agree outcomes of a successful selection process; Consider the range of tools available and their features, including evidence for outcomes tools predict, and why this might be the case. Explore how the tools might best be used together to make selection decisions.

Structure: Whole group - brief introduction, share and collate range of tools used (and how). Agree main issues and concerns. Brief literature overview. Small group discussion on main issues and concerns / pre-set questions. Whole group discussion towards best practice in selection. Agree take home messages and any next steps.

Who Should Attend: Anyone involved in designing or running selection processes for health professionals. Researchers performing predictive validity studies.

Level of workshop: Intermediate.

10Q Workshop: Teaching in the Clinical Setting: Strategies to Assist the Teacher in Difficulty

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Background: Front-line clinician-teachers are essential to medical education; yet the majority of clinicians do not have formal training in teaching. While the qualities of excellent clinical teachers have been well described, there is a gap in the literature on how to address the opposite end of the spectrum – the ineffective teacher. The identification and remediation of poor clinical teaching performance is a challenge for both postgraduate and undergraduate programs. Equally, how should faculty developers and clinician educators approach this problem and these individuals?

Intended outcomes: By the end of this workshop, participants will be able to implement a remediation program for ineffective clinical teachers tailored to their educational environment.

Structure: This is an interactive workshop. The focus is on teacher performance in the clinical setting. Using archetypal cases, small groups will develop a remediation plan, which can be feasibly implemented in particular educational contexts. Remediation strategies will be based on education theory, including: observing teacher performance, establishing objectives for remediation, creating a learning environment, experiential learning, self-assessment, use of effective questioning with learners, delivering and receiving feedback and reflective practice.

Who Should Attend: Clinician Teachers, Clinician Educators, Faculty Developers, Education Program Directors

Level of workshop: Intermediate.

10R Workshop: Tackling language related communication issues in supporting International Medical Graduates

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Background: It has been found that International Medical Graduates (IMGs) may have linguistic issues which underlie problems that can potentially impact on patient safety. This workshop outlines an approach which focuses on breaking down the linguistic issues before reintegrating them with clinical simulations. It also provides an opportunity for participants to share their own approaches.

Intended outcomes: Participants will:• be familiar with the issues around language related problems for IMGs• have the opportunity to share experiences and ideas• have some practical ideas for tackling these issues

Structure: Introduction to issues – what is known (UK and international)? (10 mins presentation) Participant experiences and solutions – discussion (30 mins) How to help – interactive examples and strategies (1 hour) Wrap up (5 mins)

Who Should Attend: Anyone involved in the induction and adaptation of IMGs.

Level of workshop: Intermediate

10S Workshop: Creating problem-based learning cases: hands-on training

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Background: The workshop will provide participants with key elements of creating a PBL template, and educational principles for developing authentic and integrated cases.

Intended outcomes: Participants will have a greater understanding of key elements of successful cases; and learn how to design new cases that address the intended learning objectives.

Structure: Participants' previous experience in PBL will be briefly explored. Then there will be a short presentation with interaction with participants on principles for constructing educationally effective cases. Participants will then be divided into small groups and asked to use the principles learnt in developing the educational objectives, a trigger and an outline of a case. More time will be given to participants to complete their task. Outcomes will be brought together in a plenary session at the end.
Who should attend: Medical and health educators, directors of medical and/or health units, and those involved in writing PBL cases.
Level of workshop: Intermediate.

10T Workshop: Innovative design of problems within a PBL curriculum: from simple to complex learning tasks

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Background: Problems are the key feature of problem-based learning (PBL). Generally problems comprise a relatively neutral description of phenomena or events that appear to be related in some way and require further explanation (Schmidt, 1983a). Students attempt to find explanations for the phenomena and their interrelationship described in the problem. In exploring the problem students will raise questions that they are not yet able to answer. These questions and unresolved problems are used to generate learning issues as starting points for students' independent learning. In addition to this conventional problem approach, alternative approaches are developed considering the attractiveness of variation in tasks, the decreasing support of the students and the stimulation of the transfer of learning. Examples of alternatives are: case studies, reverse task, imitation task, nonspecific goal task, and completion task. In this workshop we will discuss and practice the design of alternative problems.
Intended outcomes: The participant will obtain: • hands-on experience in designing innovative learning tasks • insights in when and how to use these tasks.
Structure: of the workshop After a short introduction the participants work in small groups to develop a variety of learning tasks. The different products will be presented and discussed plenary.
Who Should Attend: The participant is familiar with the PBL model and likes to acquire new approaches in the design of learning tasks.
Level of workshop: Intermediate.

10W Posters: Patient Safety

10W/1
Using Critical Incidents in Ophthalmology to Promote Safe Medical Practice

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Symon Quy (*KSS Deanery, Education, London, United Kingdom*)

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Background: Serious critical incidents are rare occurrences within Ophthalmology departments. They present, however, a unique opportunity to develop both medical and educational practice for both trainee doctors and the consultant body.
Summary of work: This project adopts an action research methodology. It investigates how a community of practice might collaborate to take ownership of change through critical reflection. A key feature of this initiative was to distribute responsibility for developing practice across all doctors within the department rather than taking a 'top-down' approach to problem resolution.
Summary of results: Key findings of the research were: ➤ Collaboration across doctors of different levels of experience will more speedily embed changes to practice; ➤ Problem resolution through shared accountability and reflection will lead to fuller understanding of processes and protcols; ➤ Critical incidents provide invaluable teaching and learning opportunities.
Conclusions: While quantitative data can show one perspective on improving safety (ie incident rates, risk assessment), it is the fuller qualitative data provided through learners' voices that constitutes a rounded professional approach.
Take-home messages: The analysis of critical incidents provides a unique means of teaching professionalism and developing collaborative solutions within medical departments.

10W/2
Handover Communication Gap: Difficulty with Communicating Key Information

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Sally Santen (*University of Michigan, Office of Medical Student Education, Ann Arbor, United States*)
Erica Brownfield (*Emory School of Medicine, Department of Internal Medicine, Atlanta, GA, United States*)
Eva Rimler (*Emory School of Medicine, Department of Internal Medicine, Atlanta, United States*)

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Background: To determine, the frequency of effective communication of patient information during the admission handover between emergency medicine (EM) and internal medicine (IM) residents.

Summary of work: A checklist of items key to the transfer of care information was developed. This checklist was called the 7 Ps and consisted of information that should be communicated when a patient requires admission. The primary outcome was the number of Ps conveyed by the EM resident to the accepting IM resident.

Summary of results: 78 direct observations were performed. In the majority of handovers, Patient Info (90%), Problem (79%), Picture (70%), and Process (73%) were communicated. However, Pending and Placement were not well communicated. The average quality of the handover as determined by the IM resident was found to be 3.9 (SD 1.1). There was strong correlation ($R\_0.9$, $p\_0.005$) between the number of Ps communicated and the overall quality of the handover.

Conclusions: The majority of the 7 Ps were communicated during patient admission handovers. However, upon examining each individual handover, there were many instances where there was a failure to communicate all of the key information.

Take-home messages: Efforts at standardizing and improving the content of information exchanged between the EM and IM residents may improve communication during a patients' hospital admission.

10W/3
The Patient Safety MiniCEX Tool: Rating Patient Safety in clinical or simulated encounters

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Brian Jolly (*Monash University, Faculty of Medicine, Nursing & Health Sciences, Melbourne, Australia*)

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Background: Patient Safety has been addressed internationally and at national levels through regulated patient safety policies and healthcare facility standards. There is, however, little practical guidance for assessing individual clinician's awareness of patient safety in clinical encounters.

Summary of work: A Patient Safety (PSM) Tool, funded by the Health Department of Victoria, was initially developed to raise awareness of patient safety issues for International Medical Graduates newly employed in acute care settings in Australia. Its relevance as a formative assessment package for other trainees was recognized in the tool development phase. A review of patient safety and medical education literature guided the PSM development process through the identification, testing, refining and validation of its dimensions; a seven stage process over a two-year period. Four dimensions, 18 Knowledge Items and 128 Competency Indicators were ranked for Importance and Relevance by key stakeholders including trainees and clinicians. Testing of the

resulting PSM on 150 participants utilized OSCEs, High/Low Simulation and Clinical (General Hospital) settings.

Summary of results: Data analysis further refined the PSM's four Competency Areas and Items. Managing Information, Clinical Judgement and Decision Making, Communication and Infection were also identified as areas of consistent borderline performance.

Conclusions: The PSM is adaptable to web-based application, and is applicable to all levels of clinicians in a variety of settings.

Take-home messages: The PSM identifies patient safety issues in practice and raises clinician awareness of patient safety in their individual practice.

10W/4
Prescribing Education for Final Year Medical Students and Foundation Year 1 Trainees across the North Western Deanery

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Background: The EQUIP study (Dornan et al, 2009) found a prevalence of 8.4% for prescribing errors by FY1s. Prescribing education recommendations for undergraduates and FY1s aimed to reduce prescribing errors.

Summary of work: Questionnaires were sent to all Year 5 and Foundation Leads in the North Western Deanery to assess current prescribing educational practice for Year 5s and FY1s.

Summary of results: Twelve hospitals gave Year 5 data. Most participate in student assistantships and prescribing in real-life contexts. Formal teaching and assessment is more limited. Fifteen hospitals contributed FY1 data. Most participate in prescribing assessment and teaching, but pharmacist input is inadequate. Foundation leads are frequently unaware of FY1 prescribing errors.

Conclusions: All Year 5s have the opportunity to prescribe under supervision but scope exists to improve teaching and assessment. The majority of FY1s are assessed at induction, and prescribing is included in the formal teaching programme. Ongoing assessment is uncommon. Pharmacists' teaching skills should be fully utilised. Lack of prescribing error recording results in failure to identify and remediate weaker prescribers.

Take-home messages: 1. Student assistantships give vital experience in real-life prescribing. 2. Exposure to varied situations benefits learners. 3. Ongoing assessment and training is essential. 4. Contact with pharmacists should be maximised. 5. Inter-professional education is crucial for prescribers.

10W/5
Teaching Medical Students About Patient Safety and Medical Errors: How Do We Teach?

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Background: Patient safety is essential to medical education and hospital accreditation. Objective: To evaluate the effectiveness of patient safety teachings.
Summary of work: During academic year 2010-2011, thirty-one fifth-year medical students were divided into two groups. The teachings were delivered during the ten-week obstetrics-gynecologic clerkship, which consisted of: 1. Lectures and orientation on patient care and obstetric procedures in the first two weeks; 2. Two different methods of obstetric procedures teaching. • Group one: lectures, demonstrations, practice on manikins followed by practice on real patients (both under supervision). • Group two: lectures, demonstrations, and practice on real patients under supervision. 3. Procedural risks and medical errors evaluation by pre-test, post-test and clinical practice examination results
Summary of results: • Post-test scores were significantly higher than pre-test scores (81.35 ± 5.61 vs. 56.58 ± 4.48; $p= 0.0001$). • The difference in clinical practice examination scores between groups were not statistically significant (351.73 ± 67.85 vs. 369.27 ± 26.12; $p=0.419$).
Conclusions: Lectures prior to hands-on experience are integral to effective teachings which subsequently facilitate risk-reducing obstetrics-gynecologic clinical practice. Typically, medical students learn substantially when confronting actual patient safety problems in real clinical settings.
Take-home messages: To ensure that effective patient safety and medical errors teachings are reached, an integrated teaching program needs to be developed.

10W/6
Teaching patient safety in clinical years

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Background: Patient safety is an important issue in today's practice. Improvement of patient safety requires collaboration from multiprofessional healthcare workers which is based on their prior knowledge and practice.
Summary of work: The undergraduate curriculum was reviewed based on SIMPLE which was used in the hospital as a tool for patient safety goals (S- Safe surgery, I- Infection control, M- Medication safety, P- Patient care process,L- Line tube catheter, E-Emergency response).

Summary of results: it was found that there are no topics of medication safety and safe surgical team in the course syllabus but medical students learned during ward work and their rotation to community hospitals. They were assigned to report the patient safety practice at community hospitals and report the incidents they found in their final year. The most common incidents are patient care process and medication safety.
Conclusions: Teaching patient safety can be done in several ways, either lecture, small group discussion, role plays or report. They can learn from real practice and observation and being involved as a team in patient care.
Take-home messages: Patient safety curriculum should be integrated in every medical school curriculum in order to decrease the risk both to the patients and healthcare professionals.

10W/7
Proportion of 6th year medical students who had a good level of knowledge about patient safety

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Background: Patient safety is the key to medical service as it reflects quality of service. Therefore knowledge of patient safety is important for health-care providers including medical students.
Summary of work: Self-completed questionnaire based on the SIMPLE patient safety goals was distributed to 257 sixth year medical students to obtain their knowledge and application in medical practice in 2011.
Summary of results: The students with a good level of knowledge were 26.2%. The highest knowledge level was regarding safe surgery 84.7%, followed medication error 82.5%. The least well understood area was infection controls 22.4%. Regarding application to practice, most (72%) correctly perform the patient care process, followed by safe surgery (65.2%). The lowest practice realm was in prevention of medication errors (4.9%).
Conclusions: Only a quarter of 6th year medical students had a good level of knowledge regarding patient safety as per the SIMPLE goals. Of concern, only a small portion of students adequately understood infection controls. The lowest practice realm was in prevention of medication errors.
Take-home messages: Medical students required knowledge intervention during ward rounds. There would be an improved level of patient safety if the subject were explicitly covered in the medical curriculum.

10W/8
Voice of medical students about logbook

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Background: As a result of concern about medical competency and patient safety which have been included in the latest Thai Medical Council (TMC) Standard in the year 2012, the Ministry of Public Health of Thailand has implemented new logbook to use with all clinical year medical students of the CPIRD programme in every Medical Education Center.
Summary of work: Two weeks after using this new logbook, fifth year medical students at Hatyai MEC were asked to attend the group activities about logbook and compared the new with the former, and the ideal logbook which they preferred.
Summary of results: Medical students like the newly implemented logbook in terms of covering more complete important data of TMC standard and not require teachers' signature or patients' name, but it is quite difficult to use. Though it is too informative, they suggest to add a list of common or important diseases they must or should know to guide their learning, some space for reflection, teachers' evaluation and feedback. Finally, they suggest that log book should be designed, attractive, and pocketable.
Conclusions: In producing logbook, not only the quality of information but the feasibility and acceptability to medical students are also important.

10X Posters: Ethics and Empathy

10X/1
Case-based reports: The Sheffield experience of integrating the learning of Medical Ethics and Law into Clinical Practice

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Background: Medical students haven't always engaged well with medical ethics and law (MEL) teaching. One reason for this is a perceived lack of relevance to clinical practice (Johnston & Haughton, 2007). We introduced case-based reports in 2010 to help integrate MEL with students' clinical experiences.
Summary of work: Aim: To investigate whether case-based reports are effective in integrating MEL teaching with clinical experience. Participants: 2010 (n=80) and 2011 (n=55) 3rd year Sheffield student doctors. Evaluation was by online questionnaire. Students were asked to rate the reports on a scale of 1 (not valuable) to 10 (very valuable), explain their reasoning behind this and consider the positive and negative aspects of this exercise. The key findings from 2010 were applied to the 2011 implementation.
Summary of results: The key themes from the 2010 qualitative data were: 1. High relevance to clinical medicine; 2. Opportunity to explore a topic of interest; 3. Better Understanding of Laws and Acts; 4. Lack of Guidance; 5. Practical Issues. The mean educational value increased from 6.4 in 2010 to 7.0 in 2011.This and the qualitative comments suggested the revised implementation was improved.
Conclusions: The innovation fulfilled the purpose.
Take-home messages: Placement based case reports are an effective tool in improving engagement with and relevance of MEL teaching.

10X/2
Interprofessional problem based learning and narrative scenarios for teaching clinical ethics: the experience from Kaohsiung Medical University in Taiwan

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Background: Problems of clinical ethics usually involve people of different healthcare professions. However, healthcare students are rarely provided with the opportunity of interprofessional learning of clinical ethics. The interprofessional curricular model of clinical ethics was not yet well established.
Summary of work: An experimental interprofessional curriculum intergrading PBL and narrative scenarios was conducted in 2010 with 36 volunteer students in Kaohsiung Medical University. A revised curricular model was put into practice in a formal curriculum of clinical ethics with 140 medical and nursing students in 2011. Questionnaires and focus group discussions were used to evaluate the effectiveness and study the related curricular factors.
Summary of results: Most students agreed that interprofessional PBL is effective (84%) in learning clinical ethics and thought that this curriculum could increase their willingness (97%) and ability (96%) for future interprofessional collaboration. Narrative scenarios were considered helpful for interprofessional discussion (88%). However, some nursing students (25.3%) thought that the matching of medical and nursing students with different duration of previous clinical education was not appropriate.
Conclusions: Our curriculum model are effective in teaching clinical ethics and interprofessional collaboration.

Take-home messages: Interprofessional PBL and narrative scenarios are effective educational strategies for student's readiness of future interprofessional collaboration in solving clinical ethical problems.

10X/3
Concerns of medical students regarding medical ethics

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Background: Medical ethics has been an important part of the medical curriculum in all medical schools. Medical Ethics education in the medical schools in Thailand has been following the guidelines of the Medical Council of Thailand. Generally, medical ethics teaching has been intergraded with students' ward work. The objective of this study was to evaluate the concerns of medical ethics by the fourth- and fifth-year medical students.
Summary of work: During February 2012, fourth-year and fifth-year medical students of the College of Medicine, Rangsit University, were randomly evaluated. They were evaluated with regard to the concerns of medical ethics by using a questionnaire. The questionnaire asked about their opinions about medical ethical principles that we use in our professional practice in medicine, autonomy, beneficence, non-maleficence, justice and human research.
Summary of results: 40.6% (50/123) of fourth-year and 40.5% (45/111) of fifth-year medical students were evaluated. All medical students were highly concerned about the medical ethical principles. Concerns with regard to the relationship with professional colleague and human research of fifth-year medical students were higher than fourth-year medical students (p<0.05). Most of medical students (61.1%) suggested that medical ethics should be taught every year.
Conclusions: Most medical students were highly concerned about medical ethics. Medical ethics is very important and should be trained every year.
Take-home messages: The undergraduate curriculum with regard to the medical ethics education may be revised in response to this concern.

10X/4
Development of medical ethics module for OB-GYN residents

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Background: Medical ethics training is compulsory. However, only informal, non systematic training without assessment is provided in Obstetrics and Gynecology (OB-GYN) residents. The objective of this study was to develop a formal and systematic ethical module.
Summary of work: Research and development design was conducted using the processes of (i) need analysis and literature review, (ii) develop training module (one lecture, three reflective writing and group discussions) and (iii) ethical competency assessment in ten stations case simulation and the module was evaluated using questionnaire.
Summary of results: Seven second and third years OB-GYN residents participated in the study. They stated that learning through reflective writing and group discussion encouraged their engagement in ethical issues. They could relate ethical aspects to their clinical experiences. During the examination they could address ethical challenging situations. However they needed to improve communication skills. Residents and staff were satisfied with the newly developed module.
Conclusions: The ethical module comprising lecture, learning through reflective writing with formative assessment using case simulation was accepted among resident and staff.
Take-home messages: Communication skills training should be integrated into the ethical module and continuous improvement is crucial for module development.

10X/5
Teaching Ethics: The Interprofessional Ethics Debate

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Background: There is agreement that ethics should be a core component of curricula but teaching it is a challenge. A classroom debate was developed for 1st year undergraduate pharmacy and physiotherapy students.
Summary of work: A controlled before and after study was conducted. Students were randomised and divided into interprofessional and uniprofessional teams. Second year pharmacy students were used as a control group. Four ethical issues were selected. Students' baseline opinion was determined on: the debate topics, debating and interprofessional education (IPE). The Readiness for Interprofessional Learning Scale (RIPLS) and the Attitudes to Health Professionals Questionnaire (AHPQ) were used to measure attitudes to IPE.
Summary of results: Students were very positive about the debating experience and found it of benefit to work as a team. There was no impact on attitudes to IPE or healthcare professionals. Analysis of the data indicated that the debate significantly changed student opinion on two of the four ethical issues (p<0.001). Opinions in the control group did not shift.

Conclusions: Students found the debates interesting and challenging. Debates stimulate critical thinking, active learning and student interest in complex and controversial issues.

Take-home messages: The use of an interprofessional in-class debate is a novel tool for teaching ethics.

10X/6
Psychotherapy, Empathy and desertion in Mexican patients

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Background: Empathy has to relate to quality of care and is considered essential in the doctor-psychotherapist-patient relationship.
Summary of work: To evaluate the patient's perception of the therapist's empathy as a factor in adherence to therapy and self-reported empathic ability of therapists, 184 patients in psychotherapy (63 men, 121 women), with 27 therapists (10 men, 17 women), answered surveys (self-report scale of empathy attitudes Jefferson medical-adapted to therapist and patient) after at least 5 or more sessions, and we follow desertion for 6 months, and we add the DSM-IV diagnostic data record by axes, attendance with demographics of therapists.
Summary of results: Of 184 cases 104 (56.5%) remained in treatment and 80 dropped out (43.5%, 53 were women and 27 men). There was no significant statistical association between level of empathy of the therapist or the perception by the patient and desertion, but there was positive significance in adherence and gender of the therapist, 47% therapists women and 67% with men (Z-2.11, P ≥ 0.035).
Conclusions: Older therapists were more empathic with older patients; diagnoses were associated with the degree of the patient's perception of the therapist's empathy.
Take-home messages: This study has relevance for educators in a formal milieu for teaching psychotherapy and professionalism in psychotherapeutic skills.

10X/7
Gender differences in medical students' empathic skills: Is this a matter of culture?

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Background: Empathy is a central characteristic of medical professionalism and has recently gained attention in medical education research. Previous studies claim that female students have higher empathic skills in comparison to their male counterparts. Empirical data are needed to explore these differences. We aimed to assess medical students' empathic skills according to gender.
Summary of work: During the final fifth- and sixth-year Objective Structured Clinical Examination (October 2011), medical students answered the Brazilian version of the Jefferson Scale of Physician Empathy (JSPE). Empathy scores were compared according to gender (t test).
Summary of results: Students' response rate was 46.7% (149 students). Although female students had higher mean empathy scores than male students (116.47 versus 113.79), this difference was not statistically significant (p=0.21). Empathy scores were also similar among male and female students in JSPE subscales (Empathic Concern, Standing in Patient's Shoes and Perspective Taking) (p>0.05).
Conclusions: Empathy scores did not differ according to gender in our study.
Take-home messages: Inconsistencies among studies related to gender differences in medical students' empathy may lead us to question whether these differences are dependent on inner/biological characteristics (e.g., genetics, personality) or if they are culturally driven (e.g., values, beliefs).

10X/8
Using reflective writing to evaluate teaching with biopsychosocial model for preclinical medical students

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Background: Biopsychosocial model (Engel, 1977) emphasizes the importance of exploring the psychosocial issues for holistic clinical care. We hypothesized that teaching biopsychosocial model could raise students' perception of psychosocial problems and empower their empathy.
Summary of work: We implemented a course entitled "Terminating the psychosocial phantom of the prejudiced

diseases" by using epilepsy as an example for 41 second year medical students in our 7-year track of medical education. The teaching strategy was composed of didactic lectures, students talking with patients in the classroom and interviewing patients outside the classroom. We compared both quantitatively and qualitatively the reflective writings before and at the end of the class.

Summary of results: Quantitatively, after the course, "realize", "understanding" and "care" were the top three words with increasing frequency. Qualitatively, the students could mention the psychosocial problems in their writing. They also not only expressed their empathy but also indicated that empathy played an important role in the doctor-patient relationship.

Conclusions: Psychosocial problem could be perceived and empathy was explicitly expressed in reflective writing after a course by using biopsychosocial model as the educational philosophy for preclinical students. It indicates that empathy could be nurtured through teaching with psychosocial model.

Take-home messages: The teaching with biopsychosocial model can nurture students' empathy through reflective writing.

10Y Posters: Work Based Assessment

10Y/1
Sweden - A psychometric free zone: first impressions of WPBA tools from an undergraduate perspective

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Background: Having gained much endorsement over the last decades mostly in the United Kingdom and the United States, workplace-based assessment (WPBA) is the established system for assessing clinical competence (CC). This masters degree project investigates the limited experience of WPBA at Uppsala University medical school in Sweden, and aims to describe levels of compatibility, need for, and possible ways of implementing WPBA. It further seeks to explore current Swedish views on CC, the possible reasons why psychometrics is not already an established system, and try to develop an explanation for the educational gap between Swedish medical schools and those using psychometrics.

Summary of work: A qualitative study with a comprehensive literature study, individual interviews and an online questionnaire survey.

Summary of results: Clearly there is deeply rooted interest in the implementation of a CC assessment program. Differences exist in the views on the organization, scope, layout, and design of such an implementation.

Conclusions: Swedish medical schools are considered ready for a transition to a, from a Swedish perspective, new way of assessing CC. The relationship between the current medical education and one with WPBA is, however, complex, and thus affect the possibilities of implementation.

10Y/2
Work based assessments: Do they work for surgical trainees?

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Background: Work based assessments(WBAs) are part of the intercollegiate surgical curriculum programme(ISCP) for surgical trainees in the UK. There is limited evidence to support their use within medical education.

Summary of work: The objective was to evaluate whether WBAs are a valid method of interpreting a surgical trainee's competence to progress through each year of the surgical training programme. A questionnaire was distributed to surgical trainees in the South West Peninsular deanery. Fifty trainees responded; thirty core surgical trainees and twenty speciality registrars. In addition six surgical trainees were interviewed.

Summary of results: The ISCP is a reliable method of standardising and recording educational activities. Trainees are engaging with WBAs but they are currently not being used effectively. Feedback, which is essential for learning, was demonstrated to be inadequate. Five key barriers affecting the successful completion of WBAs were identified: 1) Out of date and slow information technology systems 2) Poor standardisation of WBAs 3) Negative perception of WBAs among assessors 4) Poor assessor knowledge about the ISCP 5) Lack of specific and protected time for training and assessment.

Conclusions: The study demonstrates that WBAs are not providing an adequate platform for learning. This calls into question the construct validity of WBAs being used to evaluate the competency level of a surgical trainee.

10Y/3
An experience in implementing Directly Observational Procedural Skills (DOPS) in emergency medicine training for post-graduate year 1 residency

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Background: There have been limited studies on the effectiveness of Directly Observational Procedural Skills (DOPS) in the field of emergency medicine (EM) training. We would like to determine the efficacy of implementing standardized DOPS evaluation in EM procedural skills training through analyzing all DOPS evaluations carried out in post-graduate year 1 (PGY-1) residents.
Summary of work: Two hundred and five PGY-1 residents received a one-month long training in EM with DOPS evaluations at Chang Gung Memorial Hospital. All DOPS evaluations were studied retrospectively to examine the commonly evaluated procedures, the scoring, and the assessors' satisfactory level in the evaluation form.
Summary of results: Out of the 205 PGY-1 residents trained, 142 (69.27%) were evaluated twice or more. No significant improvement was observed in subsequent evaluations compared to the first evaluation. However, their overall performances were better than the 51 residents who were evaluated only once (24.88%) and 12 who were never evaluated (5.85%) by the end of the training.
Conclusions: The use of DOPS in this short course training did not significantly improve residents' EM procedural skills. However, utilizing DOPS evaluations may help stimulate learning interest and thus enhance their overall performances.
Take-home messages: DOPS evaluations may improve overall performances of residents in EM training.

10Y/4
Ways to Improve Consistency between Raters for Direct Observation of Procedural Skills in Evaluating Gynecologic Clinical Skills

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Background: Direct Observation of Procedural Skills (DOPS) is a good method to evaluate the results of gynecologic clinical skills. However, to achieve consistency between raters is not easy. We tried to revise the try-out checklist by the raters to minimize differences.
Summary of work: PGY students were randomized to take the DOPS from the Pap smear exam. At the end of the training in the department of gynecology, they received the examination using standardized patients with gynecologic model and were videotaped. By watching the videotape, raters scored them by using standardized checklists twice, in a pre-test and a post-test. After revising the checklist, the qualified raters scored twice again, in a pre-test and a post-test. Results of the examinees' evaluation were analyzed using Cronbach's reliability and inter-rater reliability.
Summary of results: In the try-out checklist, the Cronbach's reliability was 0.96 in pre-test and 0.94 in post-test. The Kendall's coefficient of concordance was only 0.26 in pre-test and 0.31 in post-test. After revising the try-out checklist and training the qualified raters, the Kendall's coefficient of concordance was 0.37 in pre-test and 0.59 in post-test. The Intraclass correlation coefficient was 0.72 in pre-test and 0.90 in post-test. This revealed that training qualified raters relates to the inter-rater reliability.
Conclusions: DOPS is an effective method for assessing clinical performance of the PGY. The consistency between raters can be improved by modifying the checklists and training qualified raters.
Take-home messages: The consistency between raters for DOPS can be improved by modifying the checklists and training qualified raters.

10Y/5
Comparison of the performance of post-graduate year-one residents from different departments by global rating and the mini-CEX in the emergency medicine department at a medical center in Taiwan

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Background: To evaluate the differences in clinical performance among various specialty backgrounds PGY1 students in the ED and the correlation between different evaluation systems results.

Summary of work: A total of 179 PGY1 residents that received 1 month ED training were divided into three groups. Group A consisted of Radiology, Pathology, and Nuclear Medicine, which were not clinically orientated. Group B consisted of Internal Medicine, Surgical, OB/GYN, Pediatrics and ED PGY1 with were all very clinically orientated. Group C consisted of Ophthalmology, ENT, Dermatology and Psychiatry specialty PGY1. The mini-clinical evaluation exercise (mini-CEX) and global rating method were used to evaluate their clinical performance.

Summary of results: By global rating, Group A had the highest score while Group C had the lowest. The global rating scores from Group A to Group C were 87.4±6.9, 86.5±5.4 and 86.0±4.7, respectively. However, Group A was lower compared to the other two groups using the mini-CEX method. When compare with Group B, Group A's scores were significantly lower in the Physical examination, clinical skill and clinical judgments part of the mini-CEX evaluation, when compare to Group C, Group A's scores were significantly lower in the clinical skill part of Mini-CEX evaluation.

Conclusions: The mini-CEX is superior to the global rating method for evaluation of clinical performance in different backgrounds of specialty training in the ED.

Take-home messages: The mini-CEX is superior to the global rating method for evaluation of clinical performance in different backgrounds of specialty training in the ED.

10Y/6
Using the mini-CEX data to evaluate the effectiveness of an internal medicine residency program

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Background: Mini-CEX is a valid, reliable method to assess professional development of internal medicine residents and its data could be useful for educators to redesign the curriculum as a process of quality improvement.

Summary of work: From September 2010 to August 2011, we implemented a mandatory monthly mini-CEX evaluation program in our residency training. The data of these mini-CEX evaluations were analyzed.

Summary of results: Among of the 863 clinical encounters, involving 97 residents and 139 evaluators, 229 (26.5%), 326 (37.8%), 308 (35.7%) evaluations were completed by R1, R2, and R3 separately. Comparing the mini-CEX scoring in the residents of three different training levels, there was statistical significance (P < 0.05) in the domains of Interviewing skills, physical examination, clinical judgment, counseling, organization and efficiency, and overall competence. Seniority was correlated with higher scores in mini-CEX evaluations. There was no difference in the domain of Professionalism.

Conclusions: A deficiency in the cultivation of professionalism was found by using the mini-CEX data in our internal medicine residency program.

Take-home messages: Mini-CEX is a practical tool to assess the clinical competencies, but further curriculum change and other assessment methods on professionalism should be adopted to complement its educational application.

10Y/7
Quality analysis of feedback using mini-CEX for postgraduate year - 1 residency training in emergency medicine: A clinical experience at Chang Gung Memorial Hospital

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Background: This study analyzed the quality of feedback using mini-CEX for PGY1 residency training in emergency medicine (EM).

Summary of work: During the 26-month study period, 1101 mini-CEX ratings (273 PGY1 residents, 67examiners) were collected. PGY1 EM residency training program was executed by attending physicians with different specialities. The quality of feedback provided by raters and the impact of seniority and specialty training of ED faculties on feedback were analyzed.

Summary of results: The percentage of three dimensions of feedback (anything especially good, suggestions for development and agreed action plan) provided by EM physicians respectively were 89.3%, 59.6%, 33.3% and 67.3%, 33.2%, 12.9% when provided by trauma surgeons. The percentage of structural feedback containing three dimentions provided by EM physicians was found as 25.3% and 12.4% provided by trauma surgeons. There was 2.3% of mini-CEX used by EM physicians providing no feedback and 29.7% for trauma surgeons. Senior ED faculty provided more suggestions for development of feedback as compared to junior faculty.

Conclusions: ED faculty provided little structural feedback using mini-CEX ratings for postgraduate residency training in EM. The seniority and specialty training of raters were associated with the quality of feedback.

Take-home messages: Rater training of effective feedback using mini-CEX is crucial for quality improvement.

10Y/8
Formative Workplace-based Assessment in undergraduate medical training: Frequency and impact on student satisfaction of documented learning goals

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Background: Workplace-based assessment (WPBA) intends to stipulate supervision and reflection in medical training and aims to create written learning goals.

Summary of work: In 2011, 4th year students of the University of Bern performed 3 Mini-Clinical Evaluation Exercises (Mini-CEX) during their clerkship in paediatrics. We analysed the frequency of written learning goals and compared duration of observation / feedback and student satisfaction between assessments with versus those without written learning goals.

Summary of results: In total, 161 students performed 483 Mini-CEX. In 32% of the assessments, one or several learning goals were written down by the student. For these assessments, duration of observation and feedback was not different. However, in case of documented learning goals,

students rated the feedback as more helpful (mean 8.7 ± 1.6 SD versus 7.9 ± 2.1 on a 10-point-scale; p < .05).

Conclusions: Specific learning goals were recorded in only one third of assessments, but in those students rated the feedback as more helpful.

Take-home messages: To further increase the utility of formative WPBA, instruction of students and trainers should emphasize the recording of specific learning goals. The presence of at least one learning goal seems to be a quality indicator for the feedback process.

10Y/9
The correlation of clinical performance scores and Mini-CEX results in pediatric residency of a single medical center

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Background: In the pediatric department of our medical center, residents will be evaluated by the attending staff monthly with regard to their clinical performance using a traditional global score. Pediatric Mini-CEX was introduced to our pediatric department last year. Each test was performed once seasonally to each resident. Our purpose is to compare the two evaluation methods to see if there is any correlation between their results.

Summary of work: The data was collected during 2011 with 21 pediatric residents ranging from the first year to the third year of residency. The traditional evaluation method is a global rating score ranging from 0 to 100. The Mini-CEX contains seven aspects and each aspect contains 3 to 4 performance indices. A 6-level scoring system was applied to each index of the Mini-CEX. Six traditional scores and two Mini-CEX results were collected from the residents. We compared the global score to the total and single aspect scores of the Mini-CEX.

Summary of results: There were no correlations between the global scores and the Mini-CEX results, when compared in total or with regard to any single aspect.

Conclusions: A traditional scoring system is a subjective evaluation method. The Mini-CEX is a more objective way to judge the performance of the residents. Therefore, it is reasonable that no correlation was seen between the two results.

Take-home messages: A traditional scoring system may represent the general and long term impression of the

attitude that the resident shows to the attending. Mini-CEX only evaluates a single performance. It is not irrelevant to keep the two systems.

10Y/10
Use of a case-based walkthrough for a patient centered approach to a needs assessment

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Background: As part of a needs assessment project exploring the care of critically ill patients in a community hospital, a case-based walkthrough (CBW) technique was added to compliment the traditional data collection methods (quantitative and qualitative).
Summary of work: A team, consisting of a nurse and respiratory therapist (RT) who were trained to use the on-site walkthrough guides, visited the emergency department and the critical care unit of the community hospital. The approach was patient centered, using clinical scenarios to guide the walkthrough. Each walk-through was audio-recorded, transcribed and analyzed using inductive coding techniques.
Summary of results: The CBW contributed to 12 of the 13 themes that emerged from all data collection sources. The data collected during the CBW was particularly useful in identifying unperceived educational needs. In particular, a detailed discussion of ventilation strategies provided rich data on knowledge and attitudes that can be targeted in a future educational intervention.
Conclusions: The CBW technique provided rich, contextual data related to unperceived educational needs that were not captured in other data collection methods. This is significant in terms of the transportability of this data collection method to other medical studies aimed at identifying gaps in knowledge and skills.
Take-home messages: A CBW can be useful in identifying unperceived educational needs.

10Y/11
A new 360 for interpersonal and team skill assessment to support post-graduate education

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Background: Cohesiveness and functioning of the team as well as colleague, team and patient/family communications are important for delivered medical quality. A critical need is a method to measure efficacy in these areas. This work reports on the development of such an instrument. In this report concerns known groups construct validity to exploring structural invariance between post-graduate, working physicians with similar physicians who are receiving education to address problematic performance in these areas.
Summary of work: A 360 survey instrument focused on the core competencies of interpersonal skills and communications, professionalism, and system-based practice was delivered to two clinical settings. The pooled data factor structure served as the basis for a confirmatory study of structural invariance. Alternative of hypotheses of weak, strong, and strict factorial invariance were tested.
Summary of results: While weak factorial invariance was supported by the data, increasing the model constraints was not support by the improvement in fit.
Conclusions: These results are consistent with our hypothesis that the 360 assessment items are measuring the same core construct in both populations. At a broader level, these data indicate the more general validity of the measure.
Take-home messages: A valid 360 is available for assessing needs and improvements in working physicians to support CME in Interpersonal behavior and communications, professionalism, and system-based practice.

10Z Posters: Curriculum Evaluation and Electives

10Z/1
Student-Selected Components: No longer an assessment of apples and oranges

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Background: Student-selected components (SSCs) are an established element of UK undergraduate medical curricula. Their purpose is the students' intellectual development through exploration in depth of a subject of their choice, whilst ensuring demonstration of mandatory competences. SSCs must be fully integrated into the curriculum and overall assessment. The ongoing challenge has been development of assessment that is valid and robust, whilst being of value to the students' overall development.
Summary of work: This paper describes the construction of assessment that ensures students' progressive development.

Marking is criterion-referenced and closely aligned to the learning objectives of the SSC. Quality assurance is further ensured by training assessors and tutors in the processes of standard setting.

Summary of results: The biggest challenge has been standard setting the "FAIL-PASS" and "PASS-EXCELLENT" cut-offs, whilst reflecting students' progressive development. Feedback from assessors' in applying criterion-reference assessment will be discussed. Students' views of the value of methods of assessment will be presented.

Conclusions: Valid and reliable assessment reflecting progressive development may limit student choice. Setting assessment criteria and achieving similar standards between assessors is challenging.

Take-home messages: Wider discussion is needed to achieve quality assurance when assessing competency-based assessment that reflects student development.

10Z/2
"My understanding of the role of a doctor has been seriously reshaped": The Impact of an Undergraduate Special Study Module in Palliative Medicine

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Background: The need for undergraduate medical education in palliative care has been highlighted by several key organizations. An optional 5-credit special study module entitled Fundamentals of Palliative Medicine was designed and offered to 3rd year medical students. The aim of the study was to assess impact of the SSM in terms of qualitative and quantitative measures, and inform further development of the module.

Summary of work: Students completed The Self-Efficacy in Palliative Care and Thanatophobia Scale at the first and final sessions. Students also completed a Minute Paper at the penultimate session.

Summary of results: Twenty four of one hundred and fifty five (15%) eligible students chose the module. Statistically significant differences were seen in pre and post scores in the 3 areas covered by the Self-Efficacy in Palliative Care (communication $p <0.0001$, patient management $p = 0.0002$ and teamwork $p = 0.03$). No significant difference was found in Thanatophobia Scale scores. Areas reported as being well understood on the Minute Paper included illness in the context of the individual patient and their family, spiritual suffering/total pain, the role of the doctor, teamwork, the importance of palliative care earlier in the disease trajectory and communication issues.

Conclusions: The module had a significant educational impact.

Take-home messages: The module was a popular choice, was well received by students and had a significant educational impact.

10Z/3
Studying to become a veterinarian - an elective pilot course

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Background: Veterinary studies are commonly considered demanding. The aim was to offer students tools for everyday life and personal development.

Summary of work: The 2-ECTS-credit elective pilot course was put together by the Faculty (organizer), Finnish Student Health Services, the University's counseling psychologists and University Sports Services. The course included interactive presentations, group work, self assessments and exercises. The themes encompassed everyday life, veterinary studies, accomplishment, professional expertise and ethics. To pass the course, the students had to produce a free-form assignment inspired by the course.

Summary of results: Nineteen 1st to 3rd year students completed the course and most of them wrote a learning diary. All engagements were found fruitful but what was found most valuable varied individually. The importance of time management was highlighted.

Conclusions: The course seemed to give an opportunity to step back from the busy life, and even make changes in one's lifestyle. This pilot offered a promising alternative to round out the veterinary education. All students agreed that a course of this type should be voluntary also in the future, but parts of it could be incorporated into the obligatory curriculum.

Take-home messages: A course with a joint approach to university students' everyday life is valuable in offering time and support for reflection.

10Z/4
Student Perception of the medical elective: a comparison between a Japanese and English University

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Background: Aims and objectives of medical elective programmes vary. This study, which formed the basis of a

student SSC project, aimed to compare and contrast the elective schemes between Sheffield (UK) and Kobe (Japan) schools to explore an international perspective.

Summary of work: A purpose-designed questionnaire was circulated to students before their elective in both schools. Additionally, semi-structured qualitative interviews were conducted exploring inter alia elective content, independence during preparation, relevance to future career, support, preparation, plans for overseas travel and satisfaction with the scheme.

Summary of results: 87 Kobe and 54 Sheffield students responded (response rate 80% Kobe; 25% Sheffield). Both schemes provided students with the option to self-design, with students from Sheffield reporting greater independence and challenges in relation to organisation and higher levels of satisfaction. Differences were identified with regard to whether an elective period was spent locally or overseas: factors influencing this decision included perception of the medical experience, language difficulties, likely cost and overseas travel.

Conclusions: This study provides useful insight into the views of students regarding two very different elective programmes at medical schools in Japan and England. The findings will help inform meeting student expectations in developing elective exchanges between the two universities. Acknowledgments: Prof Akita and Prof Kawabata, Kobe Medical School.

10Z/5
Novel Models of Student Selected Components

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Background: UK Medical Schools are required to provide students with learning opportunities and experiences outside the 'core' curriculum; currently a minimum of 10% of curriculum time must be dedicated to student choice (student selected components; SSCs). This has been interpreted and implemented in a variety of different ways. The current study has examined student opinion on a range of novel ways of developing/delivering SSCs, they include linked activities over 5 years and placing a greater emphasis on students organising their own SSCs.

Summary of work: Focus groups were carried out to determine the views of students in years 2-5, of SSC programmes and models of delivery and their advantages and disadvantages. From this a questionnaire was produced which all to students on the MBBS course were invited to complete.

Summary of results: Thematic qualitative analysis was carried out to elicit the views of current SSCs and potential new ideas.

Conclusions: SSCs programmes can offer unrivalled opportunities for in depth study in a wide variety of areas, both related and unrelated to medicine.

Take-home messages: There is a clear demand from students for new an innovative ways of delivering SSCs. The challenge will be how this can be achieved.

10Z/6
Use of a Student Selected Component (SSC) module for learning practical airway management skills for third year medical students in the UK

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Background: Practical skills are learnt by medical students usually in a simulated environment, through skills training. We describe a hands-on Student Selected Component (SSC) for learning airway management skills as third year medical students who rarely get a chance to learn these skills.

Summary of work: The SSC was supervised by a Consultant Anaesthetist with an initial meeting to discuss aims, objectives and learning outcomes of the SSC and aimed to teach airway management with an emphasis on basic airway maintenance and oxygenation and included some advanced airway techniques such as intubation. We learnt the theoretical and practical aspects of bag-valve-mask and intubation techniques using an airway head model until we felt confident enough to have practical training in theatre with feedback from the consultants.

Summary of results: Through this module, we have gained a real insight into anaesthesia and airway management and now possess the skills necessary to independently maintain an airway and patient oxygenation.

Conclusions: SSC modules are a useful tool to teach medical students practical skills. This is best achieved by a combination of simulated teaching and practical supervised training.

Take-home messages: More SSC modules should be offered for medical students to learn practical techniques useful in their future practice.

10Z/7
The Learning Experience of NICU Nursing Students through Self-Reflective Journals

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Background: The aim of this study is to describe student nurses' perceptions of clinical learning experience in the NICU.

Summary of work: An exploratory qualitative approach utilizing reflecting journals writing. 25 final year nursing students were asked to reflect and describe their learning experience in NICU through reflective journal writing. Purposeful sampling maximizes information rich description about context. Students are encouraged to incorporate themselves into their journals without inhibition: desires, opinions, emotions, attitudes or disapproval. Data was analyzed using constant comparative analysis. Informed consent was obtained from participants before data gathering.

Summary of results: Analysis revealed four main categories which reflected the students' experience: anxiety regarding skill incompetency, satisfaction with new skills, staff-student relationship, and clinical teacher competency.

Conclusions: Positive interpersonal relationship between students, staffs and teachers is the important factor for enhancing clinical learning. Clinical teachers must be enabled to provide students with appropriate knowledge and skills to decrease students' anxiety regarding task performance. Clinical instructors needed more clinical experience and knowledge to have clinical competency.

Take-home messages: We should reduce nursing students' anxiety.

10Z/8

To What Extent Does an Optional Educational Intervention Improve the Prescribing Skill of Pre-clerkship Medical Students in a Problem-Based Learning Programme?

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Background: Medical school training for students in pharmacotherapy is suboptimal and junior doctors are not confident to prescribe drugs. This study evaluated the effectiveness of an optional educational intervention on prescribing skill of pre-clerkship medical students in a PBL program.

Summary of work: Performance was assessed in seven end unit objective structured practical examinations. Physician-related prescription components (PRCs) and drug-related prescription components (DRCs) were assessed. The performance of students who attended intervention sessions (attendees) and non-attendees was compared.

Summary of results: Approximately half of the students attended the sessions. PRCs were written appropriately by most of the students. DRCs were written less competently by both attendees and non-attendees, specifically the dosage form, quantity to be dispensed and directions. Performance on individual DRCs was significantly better for attendees compared to non-attendees. The mean total score for all prescription components of attendees was significantly greater than those of non-attendees. The percentage of high achievers was significantly greater for attendees. A positive correlation was found between student attendance and the total score.

Conclusions: An optional educational intervention during the preclerkship phase is an important determinant of prescribing performance of medical students.

Take-home messages: Attending educational activities improves the prescribing skills of preclerkship medical students.

10Z/9

Internal consistency evaluation of the research axis of the Dental Surgeon career of the Odontology Faculty at the Universidad Tecnológica de México

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Background: The Odontology Faculty in the Universidad Tecnológica de México (UNITEC), is a pioneer on many fronts and is the first Faculty in Mexico with a study plan based on competences. However up to 2010, no curricular evaluation of the program has been made. So it starte with the evaluation of the internal coherence for the research curricular axis.

Summary of work: The objective was to evaluate the internal consistency of the research axis (RA), establishing the percentage of consistency between them. The proposals were analysed and categorized in three groups 1) Elemental (change of the course placement). 2) Medium: to compact two courses. 3) Deep: New course creation.

Summary of results: Internal consistency was found in 3 (0.38) courses. Partial coherence was found in 3 (0.50). There was no coherence in 1 (0.12) course. The results were presented to the RA professors, as well as the adjustment proposal for the axis in the 2011 period, categorized as: Elemental (6), Medium (1) and Deep (1).

Conclusions: The continuous evaluation of the internal congruence of the RA, is part of a monitoring process that will allow the structurization of the program courses. Changes and compaction to the RA course order are proposed.

10Z/10

Does the delivery of an established clinical teaching skills programme have an effect on clinical teaching practices?

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Background: Research suggests faculty development workshops, while usually well-received, have limited effects on clinical teaching behaviours (Steinert et al, 2006). The aim of this study was to retrospectively investigate changes in workshop participants' teaching practices in the content and delivery of feedback.

Summary of work: One hundred and fifty medical, physiotherapy and nursing educators participated in nineteen workshops over six clinical sites. Participants were subsequently invited to complete an online questionnaire asking them to evaluate their pre- and post-workshop teaching practices.

Summary of results: 54 participants (36%) completed the questionnaire. Respondents rated their feedback as more timely (p=0.0056), more constructive (p= 0.0463), informed an educational plan (p=0.0065), used specific examples (p=0.0252), and was more effective (p=0.0448) following the workshops. Respondents were also more likely to provide students with an assessment/feedback schedule (p=0.0010), collect data to support feedback (p=0.0019), and provide written feedback (p=0.0027).

Conclusions: This work suggests that faculty development workshops may have more of an effect on planned teaching practices than previously thought, however, these changes may reflect planned, as opposed to actual changes in practice.

Take-home messages: Feedback practices in clinical teaching may be affected following specific, focused, clinical teaching workshops. Further research is required to ascertain whether planned changes result in actual changes to teaching practices.

10Z/11

The students' and teachers' evaluation of conception, dedication and organisation of the Aachener Modellstudiengang Medizin: Which differences exist and how do they develop?

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Background: Medical students and the teaching staff members have been asked annually to evaluate the reformed medical study course.

Summary of work: The questionnaire applied for both groups consists of 15 questions divided into four categories (six-point-scale): conception, dedication of the students/teachers, organisation and feedback and the overall grade.

Summary of results: The results of the analysis of variance showed no significant differences between students and teachers when evaluations were aggregated for the four categories. However, when analyses were based on the single items, differences were found in seven questions from all four categories except of the overall grade.

Conclusions: The results of the present study showed that differences between students' and teachers' evaluation of the Aachener Modellstudiengang Medizin could be found in a fine grained item by item analysis, only. Sources of the differences revealed are twofold: students are generally more informed about the curriculum from the very beginning of their studies, whereas teachers are changing frequently and are often involved only in a part of the curriculum.

Take-home messages: The results are of importance for further curriculum development because they focus on the perception of the reforming process.

10Z/12

Evaluating the "Basic Science and clinical medicine integration course" from the new undergraduate medical curriculum, at the National University of Mexico (UNAM)

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Background: A new undergraduate curriculum was implemented in 2010. An innovation was the implementation of a "Basic Science and clinical medicine integration course", supported by PBL and simulation as learning strategies. The challenge was to implement the course for 1199 students, and evaluate new tutors' performance.

Summary of work: This was a cross-sectional and descriptive study. Forty-eight medical doctors were trained to work in small groups with PBL and mannequins. Two-weeks previous to the midterm evaluation, a 25-item questionnaire with a Likert-type scale was applied to evaluate tutors' performance. 1056 students (88%) completed the

questionnaire. A database was structured with the information and analyzed.

Summary of results: The sampled included 88% of the students' population and the Cronbach's α was 0.91 for the questionnaire. The evaluation indicates that almost all the tutors understood the PBL philosophy, except for "encouraging the participation of all the students". The new working experience with mannequins was well accepted, but the tutors' abilities to foster students' participation should be reinforced.

Conclusions: The evaluation helped to identify the strengths and weakness of this first group of tutors. Only by continuous professional development, tutors will overcome their flaws.

Take-home messages: Evaluate to reinforce strengths and correct flaws.

10Z/13
General competences during internship: qualitative course evaluation

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Background: In 2001 the National Curricula Guideline was proposed for Medical courses in Brazil in order to offer new orientations. It divided medical competencies in two groups: medicine specificity and general for healthcare that are: health care; decision making; communication, leadership, management and continuing education.

Summary of work: Exploratory research proposed to identify how the general competences are developed in a medical school. We interviewed coordinators of the five main areas of the internship, supervisors and students and identified four categories of analysis: the development of general competences based on common sense; the diversity in the use of methodologies and assessment during internship; the importance of faculty development under different views, and the comprehension of holistic view of the patient.

Summary of results: It was perceived that common sense was the decisive factor in the coordinators' didactic planning. The diversity of methodologies and assessment inside and among the areas were observed and is appointed as difficulty to the process; Faculty development was countersigned by all groups.

Conclusions: Difficulty in a holistic view seems to be a consequence of the fragmented formation that doesn't include the attention in all levels of care during graduation.

Take-home messages: Holistic view in graduation and faculty development can provide the development of general competencies.

10Z/14
Towards an implementation of learner analytics in an Australian medical school

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Background: The Griffith School of Medicine actively analyses various aspects of its teaching efforts with a view to continual improvement. A comprehensive resource management system was deployed at the school's inception in 2005. Student online activity data have been continuously collected, and are now considered a potentially valuable input into medical education research.

Summary of work: Increasing availability of various student data is suggesting more lines of research within the School. We look to the emerging field of learner analytics to help us understand how to more effectively use these data to improve student outcomes and guide future developments in our learning management system.

Summary of results: We describe our considerations in the context of a concept map and a list of significant issues, illustrated using examples from our experiences, including some preliminary analyses of activity data (e.g. resource access rates) with correlations to student performance. Implications for system design and some future directions are also noted.

Conclusions: Medical schools should consider current developments in learner analytics and carry out appropriate planning and systems development, to maximise the benefits and minimise the problems that this field affords.

Take-home messages: The field of learner analytics promises much in the area of higher education. Besides the potential to revitalise and re-shape our educational systems, there are significant concerns and hazards.

10Z/15
Comparison between self-assessment and interpersonal assessment of rural doctors, one year after graduation

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Background: Medical Education Center (MEC) of Lampang Hospital was launched in 1998. So far, 265 doctors were produced in the rural area of Northern Thailand. Every year, teams from our MEC visited these doctors to collect information for improving our products. This study shows the latest assessment.

Summary of work: From December 20th, 2011 to February 25th, 2012, our 9 MEC teams had site-visits to 29 doctors graduated from our MEC in 2010. They were working in 26 community hospitals. We obtained 28 questionnaires, since one doctor had resigned. Sixty questionnaires were also collected from their directors, co-workers and patients. There were 5 aspects in each questionnaire: 1. knowledge 2.

communication 3. continuous self-development 4. attitudes/ethics and 5. leadership.

Summary of results: Mean scores of interpersonal assessment were higher than self-assessment in aspect 1 (25.5 vs. 23.6, p= 0.006) and aspect 3 (8.5 vs. 7.8, p= 0.020). Scores of the other 3 aspects were not significantly different between modes of assessment.

Conclusions: Directors and co-workers trusted our doctors on knowledge and continuous self-development. However, many patients also commented that our doctors had positive attitudes. These results could encourage our doctors to have more confidence and work harder.

Take-home messages: Assessment of graduated doctors should be done to improve the production of MEC.

10Z/16
Construction and Practice of the Education Quality Guarantee System for International Students in the University of Western Medicine

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Background: With the rapid development of economics and the enhancement of international forces, the number of international students studying in China has reached an unprecedented height of development in scale and structure. Statistics show that by 2010 international students amounted to 265,090 people, from 194 nations, studying in 618 higher education institutions in China.
Tianjin Medical University (TMU), one of the earliest top-ranking western medical universities approved by the Chinese Ministry of Education to recruit international students, accepted international students from the 1950's and currently has 1,219 degree students from 64 countries.

Summary of work: To implement the Plan for Study in China (2010) and to fulfill the Global Minimum Essential Requirements (2001), researchers constructed an Education Quality Guarantee System, representing the significant development in international education of TMU over 15 years. This study aims to interpret the ways of cultivating qualified international physicians in three aspects: 1) Strengthening connotation construction, improving education quality, 2) Combing management of legal system with humanization, and 3) Improving service and optimizing environment.

Summary of results: The key results of cultivating qualified international physicians, testified successfully by international education at TMU, are to construct a pluralistic education quality guarantee system. TMU aims to optimize the level of excellent management and service to ensure the healthy development of a well-known brand, coordination of scale, quality, structure, management and effects.

Conclusions: By researching the characteristics of the System, this study concludes that internationalized mindset, perfect guarantee system, successful organization, collaborated teaching team, favorable learning environment and top-notch service and management results in a first-class medical university.

Take-home message: International student education boosts the process of university internationalization.

10AA   Posters: Active and Student Centred Learning

10AA/1
Student-patient centered learning in family planning
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Background: In Ob&Gyn section, medical students are recommended to practice in family planning (FP). However, with increasing numbers of medical students, there are not enough hospital patients for them to access. Additionally, postpartum women may lack knowledge in contraception since they usually do not come back to follow up at the FP unit. This event could lead to high rate of unwanted pregnancy. To solve these problems, we assigned the student-patient centered learning in FP and let the medical students approach and provide information regarding FP to the women admitted in the postpartum ward.

Summary of work: The medical students had self directed learning in FP and prepared to teach and advise the patients in the postpartum ward. Before approaching the patients, the students had to discuss and clarify their knowledge in FP with Ob&Gyn staff. Pre and post-tests for students' knowledge and attitudes were carried out. The other forms of pre and post-test to assess patients' knowledge and satisfaction were collected.

Summary of results: Results of this study showed that the medical students gained a good attitude in this learning model. They could improve their FP knowledge and communication skills significantly. Moreover, the patients were also satisfied and could make their decision in choosing the appropriate contraception for themselves.

10AA/2
A pilot study of individualized learning goals in selected core clerkships in the School of Medicine at The University of California, San Francisco

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Background: Active participation in learning promotes lifelong learning skills and may be enhanced for medical students by setting targeted individualized learning goals.

Summary of work: Core clerkships in internal medicine, neurology, psychiatry, obstetrics/gynecology, and pediatrics piloted a common template for individualized learning plans at the beginning, midpoint, and end of their clerkships.

Summary of results: Sixty-eight percent of medical students (71/104) completed surveys on this exercise. Overall, students somewhat disagreed that the exercise was useful to learning (2.6 on a 5-point Likert scale: 1=strongly disagreed, 3=neutral, 5=strongly agree). However, those 24% of students who began the exercise as instructed at the beginning of the clerkship found the exercise more useful (3.4/5), sompared to those 30% who began the activity at the midpoint (2.8/5) or the 46% who began it at the end (2.1/5). Students commented that usefulness of the exercise varied with personal learning style and they expressed desire for more faculty discussion of the learning plan.

Conclusions: We successfully implemented a common template for individualized learning plans in five core clerkships and will continue to refine the program based on student feedback.

Take-home messages: Individualized learning plans show promise in core clerkships for the most engaged students, but need to be well-supported by faculty for adherence, reflection, and guidance.

10AA/3
Learning to become lifelong learners: the needs of students to successfully self-direct their learning in a clinical environment

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Background: Clinical placements are heavily reliant on opportunistic patient contact, and are therefore relatively unstructured learning environments. University of Queensland medical students set learning objectives for their elective clinical placement undertaken in Year 1, with the potential benefits of improving their ability to scan clinical environments for learning opportunities and equipping them with lifelong learning skills. This study investigated the skills needed for students to direct their own learning using this approach.

Summary of work: Students completed an online module on setting self-determined learning objectives (SDLOs) prior to their placement, after which they self-assessed how well they met their SDLOs. The self-assessment data were used to explore the ability of students to develop appropriate and achievable learning objectives, through analysis of the discourse they used and range of SDLOs set.

Summary of results: This model has potential to provide medical students with a more structured clinical learning experience, allowing them to address gaps in their knowledge; however students need to learn more about what makes a good learning objective, as many were broad with no measurable outcome.

Take-home messages: Even graduate entry students, with a year's experience of problem-based learning, need support and guidance when setting their own learning objectives.

10AA/4
Continuous mentoring programme for medical students provides space for reflection and awareness of own development

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Background: Mentoring programmes have increased in medical education in recent years. Different designs and various goals are used, and programmes on a large scale require extensive resources. It is of great importance to increase the understanding of its meaning for students´ development so educators can provide the most meaningful programmes. A combined group- and one-to-one mentoring program was introduced at Karolinska Institutet. Four students meet their mentor every semester at a "Workshop Day for Professional Development" including group sessions about complicated patient encounters, individual self assessment of professional competences and opportunity to follow the mentor in clinical work.

Summary of work: A qualitative approach with student interviews and directed content analysis was chosen to investigate and interpret the meaning of this mentoring programme.

Summary of results: The analysis showed that a mentoring relation can be personal without knowing each other well. Four themes emerged: Space for the other issues, A relation to a physician behind the professional surface, Awareness of own development and The group contributes to learning.

Conclusions: This design of mentoring provides space for reflection on psychosocial aspects of the professional role. Recurrent reflection of professional competencies helps students to discover own development.

Take-home messages: Mentoring of this design provides personal space for reflection and awareness of own development.

10AA/5
Language reflects the mind: Can open ended feedback be use as a predictive of learning models?

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Background: The latest trend in medical education is developing a learner-centered educational process. This aim can only be reached by means of drastic changes both in the students' and educators' minds. It is expected that, contrary to the classical-traditional methods where students are the objects- not centered, the active learning methods transfer the students to being the subject-centered of the educational process. The aim of this study is to define the frequency of the passive and active phrases used by students in the evaluation feedback questionnaires and investigate if the statement of the students can be used as a predictor of learning models.
Summary of work: Education models classified into two groups; interactive or classical learning. A total of 5400 answers to open ended evaluation questions were collected for 3 years. The numbers of active or passive voice phrases were compared between groups.
Summary of results: It was shown that students used more active wordings after interactive learning groups than the classical group.
Conclusions: Evaluation of the students' active or passive wordings can be a clue about their position in the educational process.
Take-home messages: We can evaluate language as a reflection of mind to assess the type and success of the education model.

10AA/6
Defining "Effective Learning" in Dental Clinical Practice: A Qualitative Study in Fifth and Sixth Year Dental Students at the Faculty of Dentistry, Chiang Mai University, Thailand

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Background: Students' views of their learning experiences are useful for curriculum assessment and development. In dental education, academic publications on the topic are scarce. This study aimed to define "effective learning" from dental students' perspectives and to understand how students evaluate their learning effectiveness.

Summary of work: Four focus group discussions were held to collect data from sixteen purposively selected students. Definitions of effective learning and the ways students evaluate their learning effectiveness were discussed. Data were analyzed using thematic extraction and content analysis.
Summary of results: Students defined effective learning in dental clinic as an active learning process that improve knowledge and skills through participating in setting goals, planning, and practicing by themselves. Students evaluated their learning effectiveness through improvement of five learning dimensions: knowledge, practical skills, life skills, communication skills, and ethics.
Conclusions: The definition of effective learning was consistent with adult learning principles. During clinical practice, students focused on knowledge and skills, as well as on the learning and evaluation processes. Students' self-assessment emerged through the aforementioned five learning dimensions. However, teachers tend to emphasize only two of these dimensions, knowledge and practical skills.
Take-home messages: Dental educators should realize the importance of students' responsibility for their own learning and should provide students with opportunities for self-assessment.

10AA/7
Complex systems approach and scientific inquiry as methodological resources in 1st year medical students to learn Cellular Biology

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Background: The traditional methodology-based educative context hinders the developing of the mental abilities which assure a successful performance as future physicians in medical students
Summary of work: The proposal was to develop mental abilities and self learning skills while studying CB-contents, by using scientific inquiry and complex systems approach as methodological resources. This action-research and prospective study included 50 first-year medical students at our school, from a universe of 256 (controls), who voluntarily accepted to participate. They attended short courses for guidance. Their academic performance was continuously assessed.
Summary of results: On the basis of 25 simple research protocols developed in pairs, students were involved in teaching-learning active methods on campus and online for six months, with continuous feedback. They designed original constructivist tools that were formally presented and also accepted by the Academy to be used as didactic resources for CB-teaching. Students showed good grades when compared with the control group.
Conclusions: From this intervention, self-learning capability and mental abilities increased in these students.

Take-home messages: Scientific inquiry combined with complex systems, are effective methodological resources in a social-constructivist educative context.

10AA/8
Do students develop metacognition capabilities in a student-centered curriculum?

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Background: Brazilian universities have been changing curricula in the health field. The purpose of these changes is to graduate critical and reflexive health professionals. The key issue is that the metacognition process is important for lifelong learning, and this capability is individual and unique.
Summary of work: The aim of this paper was to verify to what extent student centered curricula support development of competences for learning to learn. A semi-structured questionnaire was used to collect data and a qualitative approach was used to analyze results.
Summary of results: There were three aspects of the course that support metacognition: (i) related to curriculum, (ii) related to teacher (iii) related to students. Curriculum aspects were formative assessment; follow up of former students, organizational culture and infrastructure. The second one was teaching-learning strategies used by teacher and faculty development. Finally, students were resistant in the beginning of the course and opened their minds to learning to learn.
Conclusions: Development of metacognition depends on the curriculum, teacher and student. Despite the face that the design of the curriculum was appropriate it didn't appear in the daily activities of students in the universities.
Take-home messages: Sustainability of a student centered curriculum is based on institutional support, increased value and engagement of teachers.

10AA/9
Creation of an Exercise for the Development of Competency in Self-Directed Learning During Basic Science Courses in Medical Education

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Background: Self-directed learning is thought to be spontaneous in students and little is done to develop it. Although learning independently in a significant manner allows the student to adapt to different conditions, teachers lack experience to create exercises that will help the student obtain this outcome.
Summary of work: We created a teacher´s guide based on a controversial, descriptive or complex theme that implies that the student will have to plan, decide, control and regulate his own study. The guide includes the selection of specific activities, methods, resources or equipment for learning. The student must find meaning in what he studies through exploration, inquiry, problem solving, creative activity and self evaluation.
Summary of results: The creation of a teacher´s guide, an instrument for the teacher´s assessment of the student and a self-assessment questionnaire for the student. As an example we present an instrument that can be used in embryology.
Conclusions: Beginning in basic science to think independently will help student´s development in his clinical years.
Take-home messages: Any teacher in basic sciences can create exercises for the development of professionalism.

10AA/10
Implementation of Self-directed Learning & Learning Contract in Family Medicine Rotations in Maharat Nakhonratchasima Hospital, Thailand

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Background: Self-directed learning (SDL) is fundamental to life-long learning but little of medical students' learning in Maharat Nakhonratchasima Hospital is self-directed.
Summary of work: A descriptive cross-sectional study was used with the objectives to evaluate medical students' performance in SDL activities and the activities themselves. Target population was year-4 medical students during 3-week family medicine rotations from 2009 to 2011. The students

were instructed to carry out individual learning projects using learning contract. After completion, they were to give presentation and write reflective report, which were evaluated by staff physicians. The SDL activities were evaluated by students using questionnaire.

Summary of results: 138 medical students (female 72, male 66) got in average 2.69 and 2.59 points out of 3 in learning contract and reflective report parts respectively. The SDL activities were rated by 49 students at the average score of 4.12 out of 5.

Conclusions: The students performed fairly well in SDL. However, it was found that the students faced some difficulties during the process but were very satisfied when finished. They hesitated to replace conventional learning with SDL.

Take-home messages: SDL seems to be effective even in otherwise pedagogic learning environment and, thus, should be encouraged to promote life-long learning.

10AA/11
Academic engagement and its relationship with self-directed learning in medical students

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Background: Autonomy of medical students in their learning processes is essential to become lifelong learners. Previous studies have shown that autonomy is related to student self-esteem, self-efficacy and prior knowledge. However, it is necessary to evaluate their relationship with levels of student academic engagement.

Summary of work: A sample of 104 Chilean medical students with average age 18.57 years (SD = 1.27), 53.85% men, was surveyed with Spanish version of Fisher King & Tague Self-directed learning readiness scale and UWES 17 students' scale.

Summary of results: Both dimensions of academic engagement (involvement and satisfaction) explain 19.56% of general level of self-directed learning, among these, involvement is the only statistically significant predictor for 10.21% of students' autonomy. At subscales level, involvement is statistically significant predictor of planning capacity and desire to learn. Satisfaction with studies is significant predictor of self-management.

Conclusions: Organization level of students depends on how immersed they feel in their studies, which is related with intellectual curiosity of students. Autonomy is independent of student's career satisfaction. Exception is the ability to identify personal shortcomings and to manage them to learn effectively.

Take-home messages: Students more involved are those who are more likely to assume an independent role to learn. (FONDECYT #1110718).

10AA/12
The effectiveness of searching for medical knowledge using a biomedical electronic databases vs. general search engines

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Background: Current medical knowledge is geared for use via a biomedical electronic database; however, general search engines are apparently more popular in Thai pre-clinical year students.

Summary of work: A randomized controlled trial was conducted in 80 volunteers, third-year medical students in academic year 2011. Self-administered questionnaire was applied to obtain score gained from using different search engines, deducted by known knowledge from the pretest.

Summary of results: The effectiveness, speed, and accuracy of accessing medical knowledge using general search engines were slightly better than using biomedical electronic databases. The ability to retrieve a correct answer was associated with former experience in using biomedical electronic databases. Pre-clinical year medical students are accustom to general search engines, as some provide medical information in Thai. Biomedical databases provide specific information in English, led to more time consumed and were less effective.

Conclusions: General search engines yielded slightly faster and more accurate searches than the biomedical electronic databases. Ability in retrieving knowledge was dependent on experience in using biomedical electronic databases.

Take-home messages: With training and encouragement of more frequent use of the biomedical electronic databases in preclinical year students could retrieve more correct medical knowledge.

10AA/13
Strategies for Teaching Biomedical English: A comparison of "learning by doing" and "learning by doing" plus instruction in reading and language learning techniques

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Background: To ensure that practitioners give up-to-date and optimum care, health care educational institutions must ensure that their graduates are competent consumers of biomedical literature in English. This study compares two methods for teaching 1st year francophone chiropractic students to read basic science texts and journals in English.

Summary of work: Students at the Paris campus were given a simple read/answer comprehension questions method of delivery while students at the Toulouse campus were given the same, plus instruction in vocabulary, methods of reading

and other strategies. The number of contact hours (4) and teacher access by e mail was the same for both groups. Outcomes were measured by comparing the change in scores between Paris and Toulouse students on pre and post course multiple choice tests of basic science vocabulary and text comprehension and by comparing student course evaluation questionnaire scores for the two groups.

Summary of results: This work is still in progress. Results will be available in June 2012.

Conclusions: This work is still in progress.

10AA/14
Is medical school perceived to encourage innovative thinking in students?

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Background: The NHS cites the ability to be innovative as essential for doctors, but whether innovative thinking is promoted in medical school is unknown. Considering a doctor's professional identity is formed during their education, this study investigated whether medical school is perceived to encourage students to think innovatively.

Summary of work: Twenty-eight semi-structured interviews were conducted with pre-clinical and clinical students and teaching staff at Imperial College School of Medicine.

Summary of results: Thematic analysis revealed three major elements of the medical school that influenced innovative thinking: teaching, assessments and the environment. The curriculum was thought to be rigid and information-intensive. Didactic teaching in large lecture theatres, with a lack of engagement was often cited by students as deterrents to innovative thinking. Assessments predominantly encouraged rote-learning due to formulaic marking systems in the pre-clinical years, with a shift in the later years to clinical examinations allowing more lateral thinking. Cross-industry exposure was perceived to stimulate innovative thinking, whereas the general environment was viewed to be one of conformity, hierarchy and a distinct lack of empowerment.

Conclusions: Medical school was not generally perceived to encourage innovative thinking.

Take-home messages: Empowering students through suitable opportunities and moving teaching and assessments away from rote-learning will help provide a new generation of innovative doctors.

10BB Posters: Assessment

10BB/1
Developing an ultrasound evaluation tool using a Delphi technique

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Background: Ultrasound examination is a complex procedure requiring knowledge, technical, and diagnostic reasoning skills. Evaluation of performance is paramount to achieve and maintain high-quality training and patient care. Although ultrasound is used within multiple specialties, there is no consensus on how to evaluate performance. To achieve international consensus across multiple specialties on a generic ultrasound evaluation tool.

Summary of work: 60 ultrasound experts from gynaecology-obstetrics, surgery, urology, radiology, rheumatology, emergency medicine, and gastro-enterology representing North America, Australia, and the European countries were identified. All experts were sent a list of components of the ultrasound examination, asking them to rate their importance. Consensus, defined by a Cronbach-alpha above 0.70, was achieved using a modified Delphi technique. Elements that were rated 4-5 on importance to the ultrasound examination by more than 80% of the experts were included in the final evaluation tool.

Summary of results: A generic ultrasound evaluation tool was developed (data collection expected to be completed at the time of presentation).

Conclusions: Content validity across multiple specialties on an international level was established as a first step of the validation of a generic ultrasound evaluation tool.

Take-home messages: Broad international consensus across multiple specialties is obtained on an evaluation tool in ultrasound.

10BB/2
Building evaluation and assessment methods inside an educational program

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Background: The academic development program of University Hospital Pedro Ernesto (HUPE) is offered to residents, their teachers and preceptors of 8 health professions. It has 4 major initiatives: residency selection process, ambiance of residents, preceptor development program (PDP) and YouHUPE (health education triggered by movie). PDP is a one year long blended course that has as audience preceptors of the 8 residency programs. It aims to provide pedagogical tools to the preceptors so they can prepare their residents in a better way.

Summary of work: The faculty involved on planning this course triggered the building of health education standards. The strategy was to create an evaluation process designed to obtain information about this course and residency programmes for subsequent judgment and decision-making.

Summary of results: Moving towards the definition of standards in the residency programmes, the 2010 class did a preceptor self-assessment instrument. The 2011 class developed one that assesses the PDP itself. Both of them were implemented in HUPE.

Conclusions: Evaluation and assessment results can potentially be used as a source os information about the program itself and can be a strong stimulus to move preceptors toward effective evaluation on residency.

Take-home messages: The educational development program planned and executed collectively is able to implement its proposal inside the institutional context, improving process and providing continued professional development.

10BB/3
Preparing medical students for finals and beyond

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Background: Final year medical students find themselves overwhelmed by the availability of revision courses. In our experience, these tend to be focused towards passing examinations with less emphasis on preparing for practice.

Summary of work: Our aim was to produce a course that would prepare students not just for finals but also for starting work as a doctor. We surveyed students to discover preferred learning methods, topics they regarded as high priority for

examinations and aspects of working that concerned them the most. With these results we designed a revision course to match these concerns.

Summary of results: We will present our results to include preferred learning methods, pre and post-course confidence across a number of educational domains, and 'usefulness' questionnaires following exams and early into work.

Conclusions: We aim to conclude that whilst students ultimately require help in passing exams, they have concerns about being ready to start work. By matching our course to their preferred learning styles it is possible to guide students to meet both these objectives.

Take-home messages: Can a final year revision course prepare medical students for both final examinations and early working life? We present our experience in designing and implementing one such course and feedback the lessons learned and scope for improvement.

10BB/4
A retrospective cohort study to investigate the associations between the assessment program of the Faculty of Geneva and the newly revised Swiss Federal Examination in Human Medicine (FEHM)

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Background: A newly revised federal qualification exam was introduced in Switzerland in 2011: an objective structured clinical examination (OSCE) was introduced along with a revised multiple choice questions (MCQ).

Summary of work: We analysed the scores of the cohort who underwent the new FEHM in 2012, and the scores of the previous cohort (n=559). The Faculty exams included 8 MCQs , 3 OSCEs, 3 computed based assessments (CBA), and 3 lab work examinations (LWE). Correlations were calculated to determine the association between all exams, and linear models were used to select which were the most predictive for the FEHM.

Summary of results: The MCQ FEMH was best correlated with the Bachelor 3 MCQs (0.51 and 0.57), with the Master 1 Paediatrics CBA (0.53) and Introduction to the Clinical Reasoning MCQ (0.48). The OSCE FEMH was best correlated with the Master 1 Internal Medicine OSCE (0.48), and with the Bachelor 2 MCQs (0.49 and 0.44).

Conclusions: Apart from the LWE and the Bachelor 3 OSCE, a vast majority of exams showed significant and moderate positive correlation.

Take-home messages: The performance of MCQ and OSCE is associated with the performance to the respective formats on FEMH.

10BB/5

Presence of the basic sciences in the National Examination for Medical Residencies Applicants in Mexico

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Background: The Flexner report emphasized the importance of the basic sciences in the medical curriculum. The objective of this study was to identify the presence of basic sciences in the National Examination for Medical Residencies Aplicants in Mexico (ENARM) and its relation to the curriculum of the Faculty of Medicine, UNAM.
Summary of work: Observational, retrospective and cross-sectional study. We utilized the academic programs of the National University of Mexico (UNAM) basic sciences curriculum, to assess the 2005 and 2006 ENARM test, involving 48 teachers. We used the goodness of fit test.
Summary of results: We found that 288 (24%) of the 1200 ENARM items analized, explored basic sciences knowledge. This percentage was lower than the percentage of the medical curriculum dedicated to basic sciences (31%). The representation of physiological (13.5%) and morphological (13.3%) sciences was similar. Pharmacology had higher representation (8%), and histology and immunology the lowest (1.3%).
Conclusions: The presence of basic sciences in ENARM confirms the importance of biomedical knowledge in medical education for the practice of good medicine.
Take-home messages: It is suggested that the presence of basic sciences be maintained and, if possible, increased in the ENARM test.

10BB/6

Correlation between internal quality assurance scores and national licence passing scores: A case study of Thai medical school

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Background: Thailand had internal quality assurance for input and process indicators to assure the quality of all faculty and university. All medical schools have been assessed during June every year using 9 categories with 23 indicators. Thai medical consortium set national board examination to assure graduate doctor's quality.
Summary of work: We study the correlation between the internal quality assurance (IQA) scoring and the percentage of medical students of passing national license examination (NLE) during the academic year 2011.
Summary of results: The result of the study showed correlation between IQA scores and the percentage of medical student to pass the NLE in all of 9 categories, Pearson's correlation was 0.881. When focussing on the category 2 (teaching and learning process) the result was 0.825.
Conclusions: By our evidence, we recommend that all medical schools have to have better IQA scores for enhancing graduate doctors which is showed by better passing number of NLE.
Take-home messages: To qualify graduate doctors, all medical schools must do internal quality assurance to show our social responsibility in health care service.

10BB/7

The ideal exam: Results from an interdisciplinary Delphi-study

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Background: Exams and assessment are sometimes considered to be a necessary evil. To enhance acceptance quality criteria were introduced. In the current study the vision of students and teachers about the ideal exam was evaluated to support the hypothesis that both groups have similar ideas.
Summary of work: Statements about the ideal exam were collected in four focus groups and 11 expert interviews. In a second step an online-survey was created for students and teachers of several disciplines to rate these statements (1=very important; 6=unimportant).
Summary of results: By content analysis 37 statements were delivered. These were rated online by 869 persons (59.9% students, 51.3% from medical subjects). Most of the participants were against the abolition of exams (5.2) and grades (4). Quality criteria (1.2-1.6), accordance with teaching (1.6), feedback for teachers and students (1.6), practical relevancy (1.9) and a competency-based nature (1.9) were rated best. The ideal format was not found, the formats OSCE (2.3), key-feature (2.3) and oral exams (2.4) received acceptable grades, MCQ (4.1) was unpopular.

Conclusions: Differences between the expert and student vision were clearly shown. Some answers in the quantitative study lacked reflection.

Take-home messages: Collecting vision of many brains is only a first step to the ideal exam. More research studies are still needed.

10BB/8
Assessment: Opportunity to improve the teaching-learning process

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Background: Assessment is an important tool, used as a guide, to direct the teaching-learning process. Construction of indicators to assessment of the preceptor is a hard task, because in the literature, there are different roles for the preceptor.

Summary of work: The study used descriptive methodology, comparing the results of the preceptors' assessment of clinical nutrition residence at Pedro Ernesto University Hospital, obtained using two instruments. An instrument filled out by residents and the second self-assessment, was built after reflections about what it is be a preceptor, in the 1st Pedagogical Practice Preceptorship course.

Summary of results: Twenty one assessment instruments were completed (by residents) and nineteen self-assessments (by preceptors). Time management was the item pointed out by residents and preceptors as fragility: difficulty in limiting the tasks accepting more than can undertake. Reflecting what has already been referenced in the literature: that all time is used to everything - to attend, teach, guide, research and learn.

Conclusions: The intensity and multiplicity of tasks performed in the preceptorship makes their measurement difficult, and a better definition and quantification of the preceptorship is important.

Take-home messages: It is important to reflect about the preceptorship practice, analyze and assess the formative role of the preceptor.

10BB/9
Feet of clay? No! Our model of the learning effects of assessment seems robust

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Background: The belief that assessment drives learning yields the ambition to drive learning using assessment. Interventions based on a validated model should produce better outcomes than efforts based on weaker theory. Despite extensive literature on the topic, no validated model explaining the learning effects of assessment exists. Before using a new model to inform interventions, it needs to be validated.

Summary of work: The aim was to explore the generalizability of the model in varied assessment contexts. Cross-sectional surveys of 593 students at three universities were undertaken, using a purpose-made questionnaire comprising written situational tests. For stringency, the model's 21 weakest associations were investigated.

Summary of results: The response rate was 45,9%. 15/21 associations between assessment factors and learning effects were significant (p<0,00625) across institutions. The role of 7/8 assessment factors, all eight learning effects and all ten mechanism factors were substantiated. Three mechanism factors (agency [25,7%], response efficacy [21,4%] and response value [14,6%]) mediated most associations.

Conclusions: The support for many of the model's weakest associations bodes well for future studies of the stronger associations.

Take-home messages: Although model validation is an on-going process, these results move the model one step closer to the stage of usefully informing interventions.

10BB/10
Timing of tests – will Group A get all the As?

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Background: With increasing class sizes, grouping of students for practical classes and continuous assessments is a common occurrence. The student perception can often be that one group is at a subsequent advantage in tests as a result of differences in scheduling for the two groups.

Summary of work: Anatomy continuous assessment marks (Card-signings) for our first year medical students were reviewed from three semesters. These students are split into two groups for their Anatomy practical classes and Card-signings; one group has 2 ½ hours free in their timetable prior to their scheduled Card-signing (Group 1), the second group has only one hour (Group 2).

Summary of results: A total of 995 continuous assessment grades were analysed from the three semesters (Group 1, n = 495; Group 2, n = 500); each of these final grades was based on three individual assessments. There was no difference in the median grade observed in the two groups (65.00 vs. 65.00; p = 0.416, Mann-Whitney-U).

Conclusions: We found no evidence that differences in scheduling of continuous assessments had any influence on grades. However, where scheduling demands do require

grouping for assessments, objective analysis of results is valuable to definitively disprove any perceived bias.

10BB/11
Comparison items analysis of medical entrance exam residency with two methods: classical test analysis and item response theory (IRT) in Mashhad University of Medical Sciences in Iran 2012

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Background: Assessment and evaluation in the medical curriculum, clinical teaching and testing is very important because they can assess the outcome of learning and teaching of students' knowledge. The great test should have validity and reliability and be capable to measure students' ability. The aim of research was comparison of two methods of item analysis, classical test theory and item response theory (IRT).
Summary of work: This research was a study to compare between classical test analysis and item response analysis in entrance exam of internal medical residency. The sample size was 4000 general physicians that participated in the entrance exam. The exam included 200 items for which their answer sheets were analyzed through Bigsteps software and difficulty index and ability parameter and the like, were estimated then were compared.
Summary of results: This research revealed that 34% difficulty index of items in classical method, was between acceptable range(30-70%), while in IRT method (Rasch method) 100% of items were in acceptable range(-2 to +2). Reliability coefficient in classical method estimated 80%, while in Rasch method it depended on differences ability levels.
Conclusions: Rasch method for analysing test has a high accuracy index in comparison of classical analysis.
Take-home messages: The Rasch model can decrease teachers' concern about precision of measurement. By using this method we estimate difficulty index that it is not dependent on person's ability.

10BB/12
How do clinical teachers assess undergraduate clinical performance in physiotherapy? A mixed methods pilot study

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Background: Research suggests that similar expert-novice differences in cognitive reasoning processes exist in the assessment of trainee performance as in clinical practice (Govaerts et al, 2011). The aim of this pilot study was to investigate the assessment reasoning of Irish clinical physiotherapy teachers, both tutors (specific teaching posts) and educators (clinicians). Ethical approval was obtained
Summary of work: Three focus groups of 4-5 physiotherapy teachers were conducted. Teachers were shown a standardised video of a final-year student-patient encounter and asked to rate the performance before (T1) and after (T2) the group discussion using a standardised marking scheme. Focus group discussions were transcribed and analysed for themes by three researchers.
Summary of results: Teachers' ratings resulted in grades of between 'fail' and '2.1' (46-69%) at T1. Six educator scores changed at T2, resulting in a lower grade. Tutor grades remained unchanged. Themes of effectiveness, clinical (practical) skills and history-taking emerged within all groups
Conclusions: While emerging themes were consistent between groups, within-group discussions revealed a wide variation in perceptions of the student performance. Peer discussion may also have an impact on assessment scores.
Take-home messages: Differences in clinical physiotherapy teachers' reasoning may impact on consistency in assessment. Expert-novice differences in clinical performance assessment require further research.

10CC e-Posters: Portfolios and ePortfolios

10CC/1
The role of the portfolio in determination of the individual route in medical education

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Background: One of the assessment methods of students' self education is a portfolio. Preparation of the portfolio has been successfully used in KSMU from 2008.

Summary of work: Portfolio consists of the following parts: abstract, preclinical preparation, clinical practice – description of the most interesting and rare clinical cases accompanied with photos and video presentation, scientific work, creation of the database of evidence-based medicine related to clinical cases, participation in university, republic, international conferences, social activity, awards and prizes. A student chooses interesting clinical cases, participates in conferences, medical discussions, takes night duties in the clinic. Results of his work are then described and applied to the portfolio. All these things facilitate determination of the individual route of education.

Summary of results: Analysis of four-year introduction of a portfolio has shown that collected in such manner data relieve choosing of the individual route of education, and demonstrate his commitment to a definite specialty. Making of the portfolio is a convenient instrument to make selection of students for future internship and residency. Furthermore, the portfolio will help a young specialist in placement. The portfolio helps in making self assessment and development of competitive features and self education, shows students' competence and professionalism. The portfolio assists in progression of professional uniqueness and competitiveness of a future specialist.

Conclusions: Portfolio making is the effective method in assessment of students' competence.

Take-home messages: Portfolio is the ideal method of demonstration of student's strong features as well as presentation for the future placement.

10CC/2
Broadening the understanding of the portfolio as a strategy for teaching-learning and assessment

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Background: The assessment of learning in health courses takes an important place: evaluating the development of skills and competencies demands the adoption of progressive assessment, involving different strategies to contemplate acquiring knowledge and developing attitudes. This study aims broaden the understanding of the use of the Portfolio as an assessment strategy in the training of health professionals (occupational therapists).

Summary of work: The study followed a descriptive and exploratory approach, both quantitative and qualitative analysis, thought documentary study of 107 portfolios produced from five subjects of the course of occupational therapy.

Summary of results: The material found in portfolios includes: images and photos, excerpts from literature, music, newspaper and magazines clippings, papers, lecture notes, movies, reflections on professional choice The material was organized from 04 empirical categories, described in descending order according to the frequency identified: (1) Art and culture, (2) Daily life reality, (3) Reflections and (4) Material related to academic knowledge.

Conclusions: The variety of materials available makes difficult to understand student's choices. On the other hand, allows us to deduce the importance of the Portfolio in the teach-learning process.

Take-home messages: The description of the material found in the portfolios suggests this tool as a facilitator of reconstruction each student's learning process.

10CC/3
Building a Learning Community Around Assessment Portfolio Advising

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Background: Physician Advisors need training to learn how their role fits into the advising mission of the competency-based portfolio assessment system at Cleveland Clinic Lerner College of Medicine and to develop the skills necessary for their advising role.

Summary of work: Anticipating the need to develop best practices around the advising process, and knowing that professional competence is developmental, impermanent and context dependent, we developed a learning community around advising. To standardize our approaches to advising students around portfolios, advisors identified challenges and successes and the lessons learned were used to develop faculty development and subsequent guidelines for advising in multiple areas.

Summary of results: Feedback from advisors demonstrate they are able to perform their duties as advisors and know when to bring issues to the group for consultation and referral and to the promotions committee.

Conclusions: Advising is important for the success of portfolios. Creating a learning community around advising requires an intentional approach, regular meetings and reflection in a supportive, nonjudgmental environment. This serves to define the skills advisors need and develop a robust training program.

Take-home messages: Advisors are chosen for interpersonal skills and emotional intelligence, but may not come to the advising table with all the necessary competencies. A learning community can facilitate necessary skill development.

10CC/4
Evaluation of the effect of using a professional portfolio on nurses' clinical competence: a mixed-methods sequential explanatory study

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Background: The purpose of this mixed-methods sequential explanatory study was to evaluate the effectiveness of using portfolios for improving the competence of nurses working in a university hospital in Shiraz, Iran.

Summary of work: In the quantitative phase according to the Solomon four group design, from 19 units, 8 units of this hospital were randomly allocated in two experimental groups and two control groups. The nurses of experimental groups, used their portfolios to reflect on their clinical experiments for 1 year. Nurses in control groups participate in their routine educational programs using Nurse Competence Scale for data collection in pre-test and post-test. In the qualitative phase, a focus group discussion approach was employed to help explain why and how this program which had been tested in the first phase, can lead up to such significant effects on the nurses' competence. For this phase, we purposefully selected 27 participants from the experimental groups and arranged them into 3 focus groups of nine nurses each. Content analysis was employed.

Summary of results: Results of quantitative phase showed that there were significant improvements in the competence scores for the experimental groups post-intervention as compared to the baseline (P < .05), but no similar improvements were found in the control groups (p > .05).The focus groups data analysis showed some reason for the results of the quantitative phase to be categorized into two themes, firstly as transformation and secondly as a ladder of development of reflection.

Conclusions: Portfolios can contribute effectively towards enhancement of the nurses' competence.

10CC/5
Reflexive portfolios as an alternative to subjective global rating: an experience in a traditional ObGyn clerkship in Brazil

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Background: The Obstetrics and Gynecology (ObGyn) clerkship at the Federal University of Uberlandia has long been using subjective global ratings in students' assessments. We observe that such ratings are not discriminative since students are traditionally assessed with equal grades. We aimed to introduce a new tool in the assessment of ObGyn clerkship students with the use of reflexive portfolios.

Summary of work: Students undergoing the ObGyn clerkship during August-October 2011 were assessed by subjective global rating (Group 1; n=21; maximum grade=5) and those undergoing the clerkship during October-December 2011 were assessed by reflexive portfolios (Group 2; n=21; maximum grade=5). Frequencies of ObGyn clerkship students' grades in groups 1 and 2 were analysed.

Summary of results: All group 1 students (100%) were assessed with maximum grades, as traditionally observed. Group 2 students had the following grade distributions: 4.4 (4.8%), 4.6 (14.3%), 4.7 (4.8%), 4.8 (14.3%), 4.9 (42.9%), 5.0 (19.0%).

Conclusions: Students grades were more discriminative when reflexive portfolios were introduced as assessment tools.

Take-home messages: In contrast to the merely summative proposal of subjective global ratings without feedback, we should also consider the formative goals of portfolios as learning tools.

10CC/6
Does the Objective Structured Clinical Examination Performance Relate to the Portfolios Performance in Under Graduate Year Surgical Training?

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Background: This study aims to explore the relationship between the performance of the objective structure clinical examination (OSCE) and the performance of portfolios in

Under Graduate (UGY) students when they are trained in a surgical department.

Summary of work: Thirty six under graduate students (Intern) who receive surgical training within a 3 month period at the Lin-Kou Chang Gung Memorial Hospital, Taiwan were included. We evaluated their learning and performance using portfolios and a 3-station OSCE at the end of program.

Summary of results: The 3-station OSCE included one physical examination station, one history taking station and one communication station. The performance scores of portfolios were compared with the scores of the OSCE. The results were below: physical examination station (p= 0.087), history taking station (p=0.884) and communication station (p=0.753). The results do not demonstrate a significant difference between these 3 groups.

Conclusions: Although there was a little relation between the OSCE score of physical examination group and the performance of Portfolios (p=0.087). The performance of Portfolios still can not predict the performance in a objective structure clinical examination (OSCE) in physical examination, history taking and communication station. We found the OSCE is still a necessary and important method for evaluation of clinical competences for Under Graduate (UGY) students when they are trained in a surgical department.

Take-home messages: The portfolios can not predict the performance of a objective structure clinical examination (OSCE) for Under Graduate (UGY) students when they are trained in a surgical department.

10CC/7
A tablet PC-web based supporting tool for clinical rotation aimed at reflective learning and alliance among teachers

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Background: Understanding overall goal of clinical clerkship, sharing students' performance among teachers in multiple clinical units and creating feedback mechanism are essential for successful clinical rotation. To fulfill these, we developed and introduced a tablet PC based-learning portfolio system.

Summary of work: During clinical rotation in 28 clinical units, 81 medical students self-assessed their performance in 5 levels. Teachers assessed students' performance using identical scales for feedback. Students' also self-assessed their competencies during and after rotation using 68 checklists to reflect entire goal. This system also provided self-produced movies, pictures and mini-test for clinical skills.

Summary of results: 85% students sufficiently fed their assessment. While 36% students completely entered their assessment, 15% students entered less than half. Almost all teachers fed feedback. Post-questionnaire and interviews revealed the usefulness of this system for students (1) prior-confirmation and reflection of learning points in each unit, and for teachers (2) sharing students' performance and assessment in other clinical units as well as their own.

Conclusions: Our tablet PC-web based system for clinical rotation promoted reflective learning of medical students and alliance among teachers in multiple clinical units.

Take-home messages: Learning portfolio software using tablet PC-web based system for clinical rotation has placed in service.

10CC/8
Using diaries for medical students on in-service course

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Background: The writing of a reflective diary is considered as an effective tool for promoting reflection and deep learning, as well as for self-assessment and evaluation of a clinical learning experience among medical students.

Summary of work: This work is a qualitative study of 50 undergraduate (2nd year) medical students' reflective diaries during five visits of community health care practice.

Summary of results: Students diaries were analyzed and following five themes were retrieved from their diaries: students 'opinions about patients, their perceptions and how it changed during visits, comments about the usefulness of the visits and reflections on themselves.

Conclusions: The second year students showed an improved understanding towards people coming from various life contexts. Diaries changed their attitudes and enhanced their reflections on their perceptions.

Take-home messages: It is possible to teach the medical students to focus on the meaning and understanding the primary health care viewpoint by using learning diaries.

10CC/9
Navigating the continuum between competent and reflective practice in residency: A video-based interactive workshop on narrative reflection

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Background: This paper describes the use of a workshop/video exercise to prepare residents in an Anesthesiology Residency Training program for narrative reflection in their required portfolio.

Summary of work: Post Graduate Year 1-4 students attended a presentation by the residency director on the new portfolio process introduced in Fall 2011. The session included an integrated workshop/video exercise on reflective writing. Students were surveyed using a 10-point Likert-type scale and open-ended questions.

Summary of results: Students felt the workshop helped prepare them to use the portfolio. They gained insight into challenges and strategies for reflecting on their practice. Their confidence increased in understanding the role of the portfolio in assessment, completing it, reflecting on practice and completing the reflective exercise. The video exercise/discussion was the most effective aspect of the session. Group activity reassured them that other residents struggle with reflection, yet it can contribute positively to lifelong learning and reflection skills.

Conclusions: Students felt this targeted learning experience reduced anxiety and helped prepare them for their first reflection assignment. A video clip, individual reflection, and group discussion contextualized narrative reflection practice within students' everyday practice.

Take-home messages: Targeted interactive learning within existing academic sessions helps students develop and contextualize skills for moving from competent to reflective practitioner.

10CC/10
Are learning portfolios useful in assessing paediatric competencies? A resident perspective

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Background: The role of a physician has evolved from a 'medical expert' to encompass those of a communicator, collaborator, manager, health advocate, scholar, and professional, as outlined in CanMEDS by the Royal College of Physicians and Surgeons of Canada. The assessment of knowledge as a 'medical expert' is less equivocal than assessing proficiency at the other expected competencies. The learning portfolio is one method that is becoming popular worldwide to more efficiently track and assess medical competencies. However, there are few reports on resident perceptions of this process, and almost none specific to paediatric residents.

Summary of work: The Paediatric Residency Program at McMaster University implemented learning portfolios in 2008, with the purpose of guiding a resident's progress through reflective learning and by providing them a means to record their evaluations, learning contracts, activities and accomplishments by CanMEDS roles, thereby helping to demonstrate the competencies achieved. To determine the usefulness of the learning portfolio as well as resident perception of and attitude towards it, a survey was sent to paediatric residents at McMaster.

Summary of results: The survey is in-progress. Results will be presented at the conference.

Conclusions: Based on the strengths and weaknesses identified, it is anticipated that the process of creating and efficiently maintaining a portfolio for paediatric residents throughout an already busy residency will be improved, while enhancing assessment of the CanMEDS competencies.

10CC/11
"Hey Tarantino, show me your pituitary!" - Testing the feasibility of an integrated, video-based portfolio for postgraduate students in Forensic Pathology in South Africa

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Background: Post-graduate students in forensic pathology in South Africa are required to submit logbooks and portfolios of learning, in which detail of practical learning experience in topics such as anthropology and autopsy technique is contained. No specifications exist for the format of the logbook and portfolio and these are currently presented in a paper-based format.

Summary of work: The objectivity and validity of a paper-based logbook and portfolio system in forensic pathology is questionable, because it invariably fails to address all important markers in the assessment process. Three themes were addressed in questionnaires to all actively practicing consultants and registrars in Forensic Pathology in South Africa: 1. The level of knowledge regarding scholarship of teaching in Forensic Pathology, 2. the assessment characteristics of individual postgraduate education programs, and 3. individual skill in using technology to incorporate student generated video as part of the process of formative assessment.

Summary of results: A scholarship of teaching and learning is not well developed in Forensic Pathology in South Africa. Implementation of a video-based portfolio system is feasible and most respondents were optimistic about the concept.

Conclusions: If the technical challenges can be solved, student-generated, video-based portfolio is a feasible and appropriate method of representing technical skill and learning for post graduate students.

10CC/12
Foundation Doctors Perceive the NHS ePortfolio to be a Useful but Stressful Training Tool

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K Nelson (*Northern Deanery, Cardiology, Newcastle, United Kingdom*)
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Background: NHS ePortfolio is a compulsory means of assessment of the progress of foundation doctors. There have been anecdotal reports of unhappiness around its use. We reviewed responses to questions regarding ePortfolio from the Northern Deanery's Your School Your Say (YSYS) foundation doctor's survey.
Summary of work: 621 foundation doctors (234 male, 379 female) from 9 trusts responded to the Northern Deanery's YSYS survey. 318 (51%) were FY1 doctors, 290 (47%) were FY2 and 13 (2%) were in standalone FY2 posts. These responses were reviewed and analysed.
Summary of results: 56% found the ePortfolio 'very useful', however there was significant variability between trusts within the region- only 42% agreeing in one trust compared with 72% in the highest ranking trust. 79% found using ePortfolio stressful with noticeably less variability between trusts in this respect (range 68-81%). 23% of respondents strongly agreed with this statement. Overall the majority (76%) found work place based assessments useful.
Conclusions: Foundation trainees in our region find the NHS ePortfolio a useful learning tool. This, however, may be at the expense of causing significant stress. The perceived usefulness of ePortfolio showed considerable variably between trusts.
Take-home messages: Results from Northern Deanery's YSYS survey suggest that ePortfolio is perceived to be a useful but stressful teaching tool.

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SESSION 11: Plenary
Wednesday 29 August: 1300-1530

11A Plenary: The patient partner in care at the heart of medical education

Vincent Dumez (*University of Montreal, Canada*)

With many faculties of medicine now adopting a competency-based approach in which collaboration, communication and professionalism are defined as the core values of educational issues, is it not essential to ensure the success of such a paradigm shift to put forward a new vision of the physician's main interlocutor: the patient? This type of strategy needs new educational content in order to comprehensively tackle the nature of the patient-doctor relationship with regard to different clinical contexts and above all the intricate question of the complementarity between scientific and lay knowledge. Innovative learning strategies must also be implemented that will facilitate (1) an earlier exposition to clinical environments with a more comprehensive understanding of the patient, (2) students' reflexivity with regard to the development of his/her relational leadership and (3) the multiplicity of learning experiences involving patients as tutors, mentors and coaches that are fully integrated to the faculties' curriculum. Since several studies have recently stressed the decline of empathy amongst a large majority of medical students in their first year of clerkship, it is certainly of the upmost importance to face this alarming phenomenon and better preparing our students to work with more informed patients who demonstrate highly individualized behaviours and very diverse expectations.

11B Plenary: Ms. Curiosity and Doctor Cat - a dramatic romance

Raquel Correia (*5th year Medical Student at the Faculdade de Medicina, University of Lisbon, Portugal*)

"– Like so many other couples, Ms Curiosity and Doctor Cat met at the college library. He was a junior resident having an allergic response to dust, she was a young medical student studying asthma..." (to be continued...).

A student overview on the importance of developing curiosity during medical school years, as a crucial skill for the improvement of doctors' drive for continuing medical education throughout different life and professional stages. A recognition that being curious everyday, keeps memory from going away.