THE SCOTTISH DOCTOR

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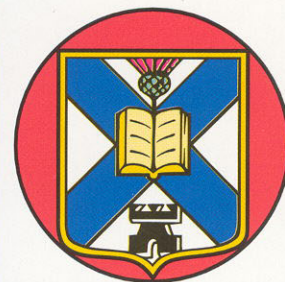
ST ANDREWS UNIVERSITY

UNDERGRADUATE LEARNING OUTCOMES AND THEIR ASSESSMENT: A FOUNDATION FOR COMPETENT AND REFLECTIVE PRACTITIONERS

SCOTTISH DEANS' MEDICAL CURRICULUM GROUP MAY 2002

Learning Outcomes for the Medical Undergraduate in Scotland Phase II Project: Assessment

VERSION 2
COMPLETE DOCUMENT INCLUDING APPENDICES

SCOTTISH DEANS MEDICAL CURRICULUM GROUP
OCTOBER 2001

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Introduction and overview

i. Review of Phase I of the Learning Outcomes project:

In March 2000, following almost a year of extensive consultation with staff and students from all five Scottish medical schools, the Scottish Deans' Medical Curriculum Group produced an agreed set of learning outcomes which clearly define the qualities and abilities of medical graduates from any of the Scottish schools (Learning Outcomes for the Medical Undergraduate in Scotland: A foundation for competent and reflective practitioners).
Since then the report has been widely distributed to staff and students at all five Scottish medical schools and has been used to inform the processes of curriculum design and development.

The outcomes are based on the following essential elements of a competent and reflective practitioner:

what the doctor is able to do;

how the doctor approaches their practice, and;

the doctor as a professional.

These elements then give rise to 12 domains:

- clinical skills
- practical procedures
- patient investigation
- patient management
- health promotion and disease prevention
- communication
- medical informatics
- basic, social and clinical sciences and underlying principles
- attitudes, ethical understanding and legal responsibilities
- decision making skills and clinical reasoning and judgement
- the role of the doctor within the health service
- personal development

Each of these 12 domains are subdivided into broad outcomes.

As well as producing a relevant and useful end-result this project identified certain key features relating to successful collaboration across different establishments. These have been crucial to the second phase of the project as represented by this document and include:

- set achievable goals with clearly defined end-products

- end-result must be visibly relevant and useful to all participants to the same degree and at the same time

- workload/input must be equally and fairly distributed between participants

- project must be achievable within specified budget/available resources

- project must be achievable within specified time period

- project must be interesting and stimulating enough to sustain enthusiasm of group.

Introduction and overview

ii. Phase II Project Method

It became clear quite early on in the design of this project that it would require the input of more than just the members of the Scottish Deans' Medical Curriculum Group. Through the Deans of each school we identified additional, key individuals who were then invited to join one of five small working groups. As far as possible each school contributed one member of staff to each group. In addition, two members of the Scottish Deans Medical Curriculum Group were allocated to each group to act as facilitators. As before, with the phase I project, an overall project co-ordinator was appointed to assist the groups with practical tasks such as literature searches as well as performing a "watchdog" function keeping the project on schedule and collating the project reports.

A project set-up meeting was held in September 2000 to which all the working group members were invited. The aims of the meeting were to
familiarise the participants with the project protocol including the timescale;
provide them with an opportunity to meet each other and the members of the SDMCG;
exchange contact information;
appoint a group spokesperson to act as the main contact with the project co-ordinator;
reach consensus and roughly identify their approach to the task, and;
agree on a date and location for their first meeting.

Funding was made available to each group to cover the costs accommodation for the meetings and travel. Although there was no central secretarial support available it was agreed that if any was required by individual groups this would be arranged through the "medical education unit" or equivalent of the school represented by the SDMCG members attached to that group.

Although there are 12 outcome domains identified in the original report it was not considered either feasible or desirable to have 12 working groups. For the purposes of the project the outcomes were grouped as follows:

1. clinical skills, patient management, patient investigation, practical procedures and communication

2. health promotion and medical informatics

3. basic, social and clinical sciences and underlying principles

4. attitudes, ethical understanding and legal responsibilities, decision making skills and clinical reasoning and judgement

5. role of the doctor within the health service and personal development

The project remit for each group was to develop an assessment strategy and guidelines for the relevant outcomes in terms of:

- general issues/overall implications including;
    - the desirability of assessing the assigned outcomes
    - why assess
    - what should be assessed e.g. knowledge, skills, attitudes
    - setting standards
    - assessing progression

- tools of assessment including;
    - identify what tools are currently in use in the Scottish schools
    - what is happening elsewhere
    - identify any "new" tools that might be useful
    - evaluate different tools in terms of validity, reliability, feasibility and potential for feedback as applied to the outcomes
    - comment on resource implications including any potential for sharing between schools
    - specific recommendations for the most useful/valid methods of assessment for each outcome
    - examples of "good" assessments

- implementation, including;

- should assessment of outcomes be integrated?
- compensatory vs non-compensatory assessments
- formative vs summative vs continuous, etc
- feedback – how? when? who by?
- at what stage(s) of the course should the assessment be carried out
- who should devise, administer and mark the assessment
- what staff development may be required
- resource implications for implementation

- other issues;
    - any recommendations regarding refinement or amendment of the original outcomes
    - any recommendations for the definition of common levels of achievement across Scotland and how this might be accomplished

The groups worked on their task by a combination of meetings and e-mail communication with regular contact, at least in the earlier stages, with the project co-ordinator.

A second meeting was held in February 2001 at approximately the mid-point of the project timescale. Each group was asked to provide an interim progress report just prior to this and these were circulated to all the other groups. The meeting provided a forum for exchange of concerns and ideas and was an opportunity to reinforce the aims of the project.

At the end of May 2001 the groups submitted their final reports and these have been collated in this document.

Introduction and overview

iii. Phase II Project results

Regardless of what type of curriculum is in place in any medical school, the thorny issue of assessment is never far from the thoughts of both students and staff. Assessment performs many functions in undergraduate medical training and to paraphrase Osler it should not signify the end of learning or education but rather be an accessory in their acquisition. All too often, particularly from the medical student's point of view, the successful completion of an assessment means that they can then forget about that topic or subject and move on to the next. Outcomes-based education, with an emphasis on progression and different levels of achievement within each outcome, can break this inefficient cycle but only if it is supported by robust, effective and appropriate assessment.

Having taken the bold step of declaring a consensus on learning outcomes for undergraduate medical education in Scotland it was inevitable and indeed essential in terms of the credibility of the outcomes, that we should turn our attention to assessment. Although at times it may seem that assessment has been "done to death" by educationalists and that there can be little new that can be said about it, there is always room for a fresh approach particularly when a focus such as the learning outcomes is available.

As might be expected some of the answers the working groups arrived at in response to their remit reinforced the fundamental principles of "good" assessment; namely that it should be valid, reliable, fair and feasible, that it should tell us about the quality of student learning, ensure minimum standards, encourage student effort and evaluate the effectiveness of the course.

The following table sets out the broad findings of the working groups and the details of these can be found in the individual group reports which make up the rest of this document.

The "question"	The "answers"
is assessment of all the assigned outcomes desirable	• *all of the broad outcomes can and should be assessed but the desirability, appropriateness and feasibility of assessment of some of the more detailed, higher level outcomes needs to be carefully evaluated before investing scarce resources*
why assess	• *positive identification of students who meet the necessary criteria to graduate* • *identify problem areas of the curriculum* • *identify problem students* • *to determine, demonstrate and predict clinical and professional competence* • *to encourage student effort* • *to measure progression over time* • *to provide students with feedback on the effectiveness of their learning*
what should be assessed e.g. knowledge, skills, attitudes	• *all of the outcomes comprise knowledge, skills and attitudes in different proportions so assessment needs to reflect this* • *for some outcomes the distinctions between knowledge, skills and attitudes are not clear so assessments must be designed to cover all aspects without artificially separating them* • *whatever is assessed it should represent what is considered to be "core" to the curriculum at the particular stage that has been reached*
setting standards	• *standards need to be set in advance if the results of assessment are to be meaningful* • *it is more difficult, but not impossible, to set standards for the "behavioural" or attitudinal outcomes* • *standards are linked to progression as they will need to vary according to the stage of the curriculum which has*

	• *been reached*
	• *a common agreed standard for the assessment of most, if not all the outcomes, could be reached in Scotland*
assessing progression	• *the outcomes should be assessed from whatever point they begin to appear in the curriculum with levels of expected achievement varying so that progression (or not) can be easily demonstrated to staff and students*
	• *allows staff and students to identify and monitor strengths and weaknesses both in the "learning process" and in the curriculum*
	• *specifically designed "progress tests" may be useful for measuring progression of some of the outcomes*
identify what tools are currently in use in the Scottish schools	• *majority of assessment tools are common to all Scottish schools, e.g. MCQ, OSCE*
	• *some examples of tools that are specific to only one or two schools, e.g. MILE (Glasgow), portfolios (Dundee, Edinburgh)*
	• *most of commonly used tools already rigorously evaluated with regard to reliability and validity*
what is happening elsewhere	• *many examples of alternative methods of assessment available in other "vocational" training such as law, dentistry and veterinary medicine although similar issues and difficulties with assessing attitudinal outcomes*
	• *other professions such as the Police and the Armed Forces may also provide ideas for assessment but tend to be resource intensive and dependent on better staff:student ratios*
identify any "new" tools that might be useful	• *assessment by portfolio*
	• *diagnostic thinking inventory*
	• *simulated wards and mock computerised patient information systems for informatics and computing outcomes*
	• *European Computer Driving Licence*
	• *defining issues test*
	• *taking part (or not) in learning opportunities should be considered to be a valid form of assessment for some of the outcomes*
evaluate different tools in terms of validity, reliability, feasibility and potential for feedback as applied to the outcomes	• *the validity, reliability, feasibility and potential for feedback of individual assessment tools varies according to which outcomes they are applied to*
	• *the process of triangulation (using several different tools to assess performance) increases the validity and reliability of the results of assessment*
comment on resource implications including any potential for sharing between schools	• *some methods of assessment are more resource intensive than others*
	• *in general assessing the "higher level" outcomes involving attitudes and behaviour requires more resources such as staff and time*
	• *the actual financial cost of some forms of assessment such as OSCEs can be calculated*
	• *some forms of assessment would lend themselves to sharing*
	• *national (Scottish) banks of questions for MCQs, MEQs and OSCEs could be set up and made accessible to all schools*
	• *background administrative costs and staff training must also be taken into account*
	• *cost and resource requirements must be weighed up*

	against the need for robust and reliable assessment, the results of which may be challenged
specific recommendations for the most useful/valid methods of assessment for each outcome	• *for most of the outcomes it is possible to identify specific methods of assessment that would meet the criteria of validity and reliability* • *for some of the outcomes existing methods of assessment are less reliable and new methods may have to be considered and/or developed*
examples of "good" assessments	• *a "good" assessment is one which meets the criteria of validity, reliability, feasibility and fairness* • *the definition of a "good" assessment should also include the concept of appropriateness both in terms of the outcome being assessed and the stage the students have reached in the curriculum* • *in these cost conscious times resource requirements may also have to be considered in defining a "good" assessment*
should assessment of outcomes be integrated?	• *there is considerable overlap between many of the outcomes so it seems reasonable and desirable that assessment should also be integrated where appropriate, e.g. it is reasonable to assess some of the communication outcomes at the same time as some of the outcomes relating to clinical skills*
compensatory vs non-compensatory assessments	• *the outcomes are considered to define the qualities and abilities that are essential at the time of graduation, therefore they are the "core" and are all equally important* • *there should be no "compensatory" mechanism which would allow students to graduate without having demonstrated competence in all the outcomes although the expected levels of achievement will vary between outcomes*
formative vs summative vs continuous, etc	• *all forms of assessment have their place with some being more appropriate than others depending on the outcome* • *summative assessment does have a formative element to it* • *peer assessment and self-assessment can be used as a means of formative assessment in particular*
feedback – how? when? who by?	• *feedback is an integral part of assessment and can be given verbally, electronically (computer-based assessments) or in writing* • *feedback should generally be given by someone who has been involved in the particular assessment process* • *feedback needs to be given as soon as possible after the results of the assessment are known* • *feedback needs to be followed up with advice and guidance on improving performance when needed*
at what stage(s) of the course should the assessment be carried out	• *the timing of assessments depends on when a particular outcome features in the curriculum* • *an outcome which appears at all stages of the curriculum does not necessarily need to be continuously assessed but should be assessed at regular intervals to ensure that progression is taking place*
who should devise, administer and mark the assessment	• *in general, assessments should be devised and administered by staff experienced in the outcomes being*

	assessed
	• *it should be possible, and indeed it is probably preferable, for marking to be carried out by non-specialists/generalists*
what staff development may be required	• *all staff need to be familiar with the methods of assessment used in their school both in terms of implementation and interpretation of results*
	• *all staff should be encouraged to become involved in the design and development of assessment methods for the outcomes most relevant to them*
	• *staff should be provided with training that is appropriate to their needs depending on their individual involvement in assessment*
resource implications for implementation	• *implementation of assessment may be more resource expensive than design and development as it is a more regularly recurring process*
	• *it is more difficult to envisage ways for sharing implementation which might reduce "costs"*
any recommendations regarding refinement or amendment of the original outcomes	• *the process of considering how to assess the outcomes has inevitably lead to a rethinking of the way in which many of them are defined*
	• *none of the outcomes should be discarded at this stage on the grounds that they cannot be assessed but some may need amended*
any recommendations for the definition of common levels of achievement across Scotland and how this might be accomplished	• *the sharing of banks of assessment items across Scotland could provide information leading to the definition of common levels of achievement as it would allow comparison of students in different schools with different curricular styles*

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Glossary of terms and abbreviations

CC	Community Course (Aberdeen)
CRQ	Constructed Response Question
ECDL	European Computer Driving Licence
EMI	Extended Matching Items
GMC	General Medical Council
IT	Information Techonology
MCQ	Multiple Choice Question
MEQ	Modified Essay Question
MILE	Medical Independent Learning Exercise (Glasgow)
MMPI	Minnesota Multi-phasic personality Inventory
OMR	Optical Mark Reader
OSCE	Objective Structured Clinical Exam
OSLER	Objective Structured Long Examination Record
OSPE	Objective Structured Practical Exam
OSSE	Objective Structured Scientific Exam
PBL	Problem Based Learning
SAQ	Short Answer Question
SDMCG	Scottish Deans' Medical Curriculum Group
SSM	Special Study Module
WTE	Whole Time Equivalent

Criterion referenced assessment: performance of the individual is measured against specific preset standards of competence e.g. driving test.

Norm referenced assessment: performance of the individual is compared with that of others of similar age and background; fixed pass marks regardless of how low or high the general level of attainment is

Double marking: practice of having two assessors scrutinising the same piece of work and reaching independent conclusions which are then compared

Negative marking: practice of deducting a whole or fraction of a mark when a wrong answer is given - most commonly used in MCQ exams

Computer Aided Assessment: examinations delivered in whole or part on computer

Formative assessment: assessments undertaken at various stages throughout a course to provide feedback to students and staff on progress; actual score not used to determine if student will exit or proceed to next stage

Summative assessment: usually undertaken at the end of a specific section of the course to determine what has been learned; not predictive of future performance but may determine if student is allowed to proceed to next stage of the course

Triangulation: looking at an individual's performance from several different standpoints using different assessment tools to measure the same outcome

"The Scottish Doctor": Learning Outcomes for the Medical Undergraduate in Scotland: a foundation for competent and reflective practitioners. A report produced by the Scottish Deans' Medical Curriculum Group in March 2000

Assessment of outcomes for clinical skills, practical procedures, patient investigation, patient management and communication

The Learning Outcomes for Clinical Skills

The new medical graduate should be able to demonstrate competency in a range of clinical skills unsupervised and to a predetermined standard.

This could include:

Take a history from patients, relatives and others.

All age groups; local multicultural/multiethnic factors; a wide range of different contexts and a patient-centred, sensitive, structured and thorough approach with demonstration of principles of good communication.

Undertake physical examination of patients.

General and systems-based; appropriate for patient's age, gender and state of mental and physical health, in a thorough, sensitive and systematic manner.

Interpret results of history taking, physical examination and investigations.

Recognition of abnormality and correct interpretation of common investigative tests.

Make a diagnosis

Gathering and analysis of all available information. Recognition of important, life threatening conditions requiring immediate treatment.

Formulate a management plan

Focus on patient's needs, prioritise, involve patients and other members of the healthcare team and recognise own limitations.

Record findings

Records concerning all relevant communications with patients / relatives and colleagues. At a minimum records are legible, dated, signed, concise and contemporaneous.

Learning Outcomes for Practical Procedures

Mastery of appropriate practical procedures at the time of graduation is an essential part of the smooth transition from undergraduate to PRHO. The following lists suggested procedures that the new graduate should be able to carry out unsupervised. Some of these procedures also feature in the domain of Patient Investigation and many others are not specifically mentioned here as they should be covered by normal physical examination e.g. fundoscopy, visual field testing, otoscopy, rectal examination etc.

This could include:

Measuring and recording
- *radial pulse rate*
- *blood pressure*
- *body temperature*
- *peak expiratory flow rate*
- *blood glucose using Reagent sticks with and without a glucometer*
- *urinalysis using Multistix*
- *faecal occult blood testing*
- *pregnancy testing*
- *perform and interpret a 12 lead ECG*
- *manage an ECG monitor*

Administering and doing
- *First Aid*
- *basic resuscitation and basic life support for adults and children/infants*
- *administration of oxygen therapy*
- *venepuncture*
- *take a blood culture*
- *establish intravenous access and set up a giving set*
- *male and female urinary catheterisation*
- *collection of MSU*
- *arterial puncture*
- *scrub up and gown for surgical and sterile procedures;*
- *skin suturing*
- *wound care and basic wound dressing*
- *make up drugs for parenteral administration*
- *administration of intravenous, intramuscular and subcutaneous injections*
- *dosage and administration of insulin and use / prescribing of sliding scales*
- *use iv infusion and volumetric pumps*
- *take nose, throat and skin swabs*

Learning Outcomes for Patient Investigation

As with practical procedures there are different categories of patient investigation depending on whether or not we would expect a new graduate to be able to undertake the task themselves or simply to know how the investigation is carried out and when it is appropriate to use it. Competency in the general principles of patient investigation is essential.

	This could include:
General principles of patient investigation	*Appropriate choice and use of investigation.* *Requesting/ordering of investigations according to local protocols / guidelines.* *Obtaining informed consent for investigations.* *Preparing patients for investigations practically and with adequate information.*

Laboratory-based investigations:	*Demonstrable knowledge of the circumstances in which the commoner laboratory-based investigations are indicated and the procedures required to obtain the necessary material for investigation. To include:*
	    Biochemistry
	    Haematology
	    Microbiology
	    Pathology
	    Cytology
	    Genetics
	    Immunology
	    Virology

Radiological investigations	*Demonstrable knowledge of the range of radiological investigations available and their appropriate use in different circumstances.*

Clinical investigations	A number of system-specific investigations which the graduate should know about and may have observed, but would not routinely be expected to perform c.f. Practical Procedures.
	  • *Exercise tolerance test*
	  • *Pleural tap/biopsy*
	  • *Upper and lower GI endoscopy*
	  • *EEG*
	  • *Lumbar puncture*
	  • *Cystoscopy*
	  • *Cervical smear*
	  • *Colposcopy*
	  • *Skin biopsy*
	  • *Joint aspiration*

Learning Outcomes for Patient Management

New medical graduates cannot be expected to have had unsupervised experience of all aspects of patient management as many are restricted by law, e.g. drug prescribing. However, it is reasonable to expect that they will have a demonstrable knowledge of the important aspects of management in the areas outlined below and that they will have had supervised involvement in such activities.

	This could include:
General principles of patient management	*Use of patient-centred, holistic approach with careful consideration of all information available from history, physical examination and investigations and in full consultation with patient, relatives etc.* *Recognition of the importance of teamwork*
Drugs	*Knowledge of prescribing.* *Selecting method of delivery.* *Calculating dosages.* *Consideration of interactions and adverse effects.*
Surgery	*Recognition of indications for intervention and the available surgical interventions.* *Appropriate use of informed consent and the understanding of principles of pre-, peri and post-operative care.*
Psychological	*Recognition of interventions available and their use.*
Social	*Consideration of patient's social circumstances, work, family etc, when determining treatment options.* *Available interventions* *The role of other organisations.*
Radiotherapy	*Knowledge of options available and their appropriate use.* *Understanding the effect on the patient.*
Therapy services	*Appropriate use. An understanding of what can be achieved and what is involved for patient and physiotherapist / occupational therapist / speech therapist etc.*
Nutrition	*Understanding the role of nutrition as a major non-drug therapy in some medical conditions.* *Selecting appropriate method of ensuring adequate nutrition to meet individual patient's needs.*
Emergency medicine	*Management of life threatening conditions whether due to trauma or disease e.g. acute MI, diabetic ketoacidosis, acute asthma, haemorrhage, anaphylaxis, etc.* *Demonstrating systematic approach with appreciation of local protocols/guidelines and working effectively as part of emergency care team.*
Acute care	*Management of a variety of medical and surgical conditions that are not immediately life-threatening but which require early treatment, or management of more serious, life-threatening conditions in the period following emergency management e.g. uncomplicated cerebrovascular accident, exacerbation of chronic obstructive airways disease, etc.*
Chronic care	*Consideration for:* *patient's age; nature of chronic disease; effect on patient e.g. loss of mobility, psychological impact*

Appropriate use of drugs, appliances/aids, etc.

Intensive care	*The circumstances under which an individual patient might require intensive care.*
	Recognition of interventions / monitoring capabilities offered by intensive care and the implications for patient and family including psychological.
Palliative care	*Recognition of what palliative care can offer, where it can be delivered and by whom. Knowledge of how to involve patient, family, friends as well as healthcare professionals and other relevant bodies.*
Pain control	*Specific knowledge of pharmacological, physical and psychological interventions.*
	Selecting the most appropriate method and knowledge of when to initiate pain relief. Understanding the role of the pain management specialist.
Rehabilitation	*Understanding of the integral role of rehabilitation in recovery especially after major illness, significant trauma or surgery e.g. myocardial infarction, spinal injury or transplantation. Appreciation of the need for a specific programme of rehabilitation and the role of other healthcare professionals in providing this.*
Complementary therapies	*Appreciation of what is available.*
	Outline of what is involved in most commonly practised therapies; how alternative and conventional therapies might be combined.
	Keeping an open mind and remaining impartial regarding the use of complementary therapies.
Patient referral	*Making appropriate referrals to the right professionals.*
	Assessing at what stage of management referral may be indicated.
	Giving and receiving the appropriate information.
	Keeping the patient informed.
Blood Transfusion Services	*Nature and extent of service.*
	How blood products are obtained through donors and by manufacture including issues of safety.
	Diversity of blood products available and how they are used in different circumstances.
	Making the most efficient and appropriate use of the Blood Transfusion Service in the care of patients

Learning Outcomes for Communication

Good communication underpins all aspects of the practice of medicine. All new graduates must be able to demonstrate effective communication skills in all areas and in all media e.g. orally, in writing, electronically, by telephone etc.

	This could include:
General principles of good communication	*Being able to listen and use other appropriate communication techniques including an appreciation of non-verbal communication / body language (one's own and the interviewee's).* *Gathering and giving information with good record keeping and correspondence skills.* *Mediating, negotiating and dealing with complaints.* *Making oral presentations and writing reports / papers.* *Telephone usage*
Communicating with patients / relatives	*Answering questions and giving explanations and/or instructions.* *Strategies for dealing with the "difficult" consultation including defusing aggression, breaking bad news and admitting lack of knowledge or mistakes.* *Making requests e.g. post-mortem, organ donation.* *Obtaining informed consent.* *Confidentiality.*
Communicating with colleagues	*Transfer of information orally, in writing and electronically.* *The "art" of the good discharge summary and patient referrals.*
Communicating with Police and Procurator Fiscal/Coroner	*Proper procedure when such communication is necessary and how to relay appropriate information without breaking rules of confidentiality.*
Communicating with media and press	*A clear understanding of who should give information to the media and press and what form it should take including the need to maintain confidentiality where individual patients are concerned.*
Communicating as a teacher	*Recognising the importance of sticking to what you know, knowing your own limitations and admitting when you don't know.* *Some basic teaching techniques e.g. demonstrating practical procedures, using various teaching aids, etc.*
Communicating as a patient advocate	*How to recognise when this is appropriate and how it may be accomplished effectively.*

Assessment of these outcomes:

General Issues

Is adequate assessment possible?

We realise that total assessment of all details even in a core curriculum is not possible. A compromise of the scope of the assessment instruments has to be made. We acknowledge the limitations of an exam in simulating the clinical setting and in the ability to predict the performance of any individual in the future. As an overarching principle we believe that it is important that all assessment procedures are conducted in as professional and objective a manner as possible, preferably under the guidance of an expert assessment committee. We recommend that in all medical schools exam procedures and questions are checked for their validity and reliability as fully as possible, and that all examiners receive appropriate training and monitoring.

Why assess?

Assessment is a statuary requirement of a medical course. Assessment is primarily to determine and demonstrate competence. We recognise that a summative assessment can also be a formative experience.

What to assess?

A representative of core skills, knowledge and attitudes should be assessed. Special practical procedures and skills should be targeted. In different assessment scenarios students could be expected to perform at levels of competence appropriate to the stage of their training.

Tools and Methods of Assessment

The assessment instruments in current use were discussed and scored on their ability to assess the five learning outcomes we had been assigned (Table 1).

Evaluation

The assessment instruments were scored on their validity, reliability, reproducibility, feasibility and on the resources they required and their opportunities for formative feedback. (Table 2)

Ideas for New Methods
- structured viva
- video could be added to any assessment instrument to check it's reliability
- a hybrid exam of linked OSCE and EMI questions in alternate stations
- linked OSCE stations
- Possible establishment of 'core' OSCE stations to be held in a central exam question bank. If these were validated and approved by individual University assessment committees, then Medical Schools could compare their students performances by running OSCE's containing a certain number of identical core stations (perhaps 3 or 4). School's would of course retain a significant element of individuality through the remaining non-identical stations.

Resource Implications
- an assessment office including a co-ordinator and assessment committee are required in each medical school. Training of examiners who would write appropriate exam questions is required.
- a Scottish bank of MCQ's, EMI's, CRQ's and OSCE questions
- sharing OSCE venues
- a framework for the curriculum based on learning outcomes

References/Evidence
- we would recommend that references be linked to the grid to provide Best Evidence Medical Education.
- National Board of Medical Examiners (USA) Website

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	Clinical Skills	Communication Skills	Patient investigation	Practical Procedures	Patient management
OSCE/ OSSE/ OSPE	✓	✓	✓	✓	✓
OSLER	✓	✓	✓	%	✓
Short Cases	✓	✓	✓		
MCQ			✓		✓
EMI			✓		✓
MEQ/ CRQ			✓		✓
Logbook	✓		✓	✓	
Case histories	✓	✓	✓		✓
Certification of procedure				✓	
Video		✓			
Viva		✓	%		%

%   to some extent

Table 1: Current use of assessment instruments

	Validity	Reliability	Reproducibility	Feasibility Practicality	Resources	Formative Feedback
OSCE	✓✓	✓✓	✓✓	✓✓	Staffing venues equipment teaching pat:/SP technician	Some
OSCLE	✓	0	0	✓	Time	Some
Short Cases	✓✓	✓	0	✓	Patients	Some
MCQ	✓	✓	✓✓	✓✓	Bank Optical reader	None
EMI	✓✓	✓✓	✓✓	✓✓	Staff training bank	None
CRQ	✓✓	✓✓	✓	✓✓	Speciality marker agreed answer sheets	None
Logbook	✓	✓		✓✓	Clinician marker	Considerable
Case histories						
Certification of procedure						
Video		Contributes to reliability if used in conjunction with other instruments				
Viva	✓			✓	Time staff	Considerable

Table 2: An Analysis of the relevance of the assessment instruments

Appendix

Example MEQ
Example CRQ
Example EMI

EXAMPLE OF AN MEQ

A 60 year old male smoker, with non-insulin dependent type II diabetes presents with an 8 week history of an infected ulcer on his left big toe.

1)   What are the four main causes of foot ulceration in a diabetic?   (4 points)

Peripheral, autonomic and motor neuropathy
Micro/macrovascular disease

2)   What is the possible local complication of this infected ulcer? How would you confirm its presence?
        (2 points)

Osteomyelitis
X-ray

3)   In a patient with no pedal pulses, what non-invasive test can you do to help quantify the blood flow to the foot?   (1 point)

Ankle-brachial pressure index

Why might this be unreliable in diabetics?   (1 point)

Calcified vessel

4)   This diabetic has clearly got sever limb ischaemia. What other invasive specific test would you do?
        (1 point)

Angiogram

5)   He is shown to have blockage of his superficial femoral artery, and calf vessel disease but a continuous posterior tibial artery to the ankle and an adequate foot arch.

What are the two main interventional treatment options?   (2 points)
What are the possible complications of each?   (4 points)

Angioplasty – distal embolus, re-occlusion, haemorrhage, false aneurysm at groin.
Surgery – haemorrhage, infection, occlusion, amputation

6)   What advice would you give a diabetic regarding foot care?   (5 points)

Good control of blood glucose
Daily cleaning and inspection of feet
Avoid walking barefoot
Use a chiropodist
Use specialist footwear
Inspection of shoes for foreign objects before putting on
Prompt treatment of all foot lesions

EXAMPLE CRQ

A 42 year old off-shore oil rig worker, attends your GP surgery complaining of a week's history of pin radiating down the lateral side of his left leg with associated tingling in his foot. His symptoms started after lifting some heavy machinery. The "medic" on the rig has sent him on shore leave but his symptoms have persisted. Your physical examination reveals diminished pinprick sensation along the lateral border of his foot. There is a suggestion of weakness on plantar flexion of the hallux and the left ankle jerk is absent.

1)   Irritation of which nerve is most likely to be causing this patient's symptoms?   1 mark

Left S1 nerve root

You suspect a prolapsed intervertebral disc and wish to arrange a non-invasive elective investigation to visualisae the precise pathology.

2)   What investigation would you request?   2 marks

MRI (NMR) scan

The investigation is reported as showing a disc prolapse (slipped disc) at the level you suspected. Complete the following sentence which describes the nature of the pathology of this condition.

3 marks

There is herniation of the _____through the _____at the disc space between the following two vertebra_____

Nucleus pulposus
Annulus fibrosus
L5/S1

Over the following two weeks the patient's symptoms fail to settle with conservative treatment but while awaiting an outpatient appointment with the neurosurgeon the patient is admitted to hospital one evening as an emergency with sever back pain radiating now to both legs. He has not passed urine all day. The receiving registrar records saddle anaesthesia and loss of anal tone.

3)   What is the diagnosis now?   1 mark

Central disc prolapse at the same level

At this stage the patient's employer phones you to ask you why he has been off work so long.

4)   What information can you give him?   1 mark

None about his medical problems without the patient's written consent.

Total 8 marks

EMI questions for Clinical Skills

Theme: Irregular pulse

Options: A   Mitral stenosis   H   Hypertrophic cardiomyopathy
              B   Ventricular septal defect   I   Aortic regurgitation
              C   Atrial flutter   J   Infective endocarditis
              D   Graves disease   K   Alcoholic cardiomyopathy
              E   Mitral regurgitation   L   Phaeochromocytoma
              F   Multifocal ectopic beats   M   Aortic stenosis
              G   Ventricular tachycardia   N   Atrial septal defect

Lead in: For each patient with an irregular pulse, select the most likely diagnosis

Stem 1:   Over a period of 3 months a 32 year old woman has intermittent palpitations, sweating and loss of 3kg in weight despite a very good appetite. Radial pulse is 160 and completely irregurlar with a blood pressure of 148/62 mmHg and a soft ejection systolic murmur. The skin of the forearm has a velvety texture.

              Correct answer: D

Stem 2:   A 60 year old woman has a systolic heart murmur since her student days and developed breathless attacks at night while on holiday in Tenerife. The pulse is 160 and completely irregular and blood pressure is 110/94 nnHg. There is a loud ejection systolic murmur over the upper praecordium transmitted to the neck.

              Correct answer: M

Assessment of outcomes for health promotion and disease prevention and medical informatics

The Learning Outcomes for Health Promotion and Disease Prevention

Every contact between a doctor and a patient can be seen as an opportunity for health promotion and disease prevention. It is therefore essential that the new graduate knows how to make the most of these opportunities through demonstrable knowledge of the principles involved both for individual patients and populations.

This could include:

Recognition of the causes of disease and the threats to the health of individuals and populations at risk

Assessment of distribution of risk factors in the population.

To be able to implement, where appropriate, risk reduction strategies for individual patients

Knowing how to change risk factors. The use of evidence-based medicine and effective interventions.

Appreciate that health promotion and disease prevention depend on collaboration with many other professionals and agencies

Identify who the other professionals and agencies are and what their role is.

Plan health promotion taking into account barriers to preventing disease and promoting health both in the individual and the population

Consideration of; political, economic, behavioural and organisational barriers.

Screening

Criteria for determining appropriate implementation of screening programmes.

Assessment of these outcomes

General issues regarding Health Promotion and Disease Prevention:

Key features to consider in the assessment of Health promotion, Disease prevention include:
1. Health promotion, disease prevention is an important outcome.
2. The GMC have consistently criticised the lack of inclusion of 'Health promotion, disease prevention' in new curricula.
3. Health promotion has a lower profile with students than it deserves.
4. It is not an easy outcome to assess especially in an integrated course

The reasons for assessment of 'Health promotion, Disease prevention' are as follows:
1. It would highlight both to staff and students its importance.
2. It will determine the competence of the student.
3. It will focus students learning. (Whilst it was recognised that it is not ideal to use assessment to drive learning it was felt that inclusion of assessment questions in this area would facilitate students learning in this area[1].)
4. It will help fulfil the GMC directive.

Health promotion and disease prevention builds on the teaching of the Behavioural Sciences, Public Health and Epidemiology. An understanding of Health promotion, Disease prevention rests on the knowledge of these core subjects. Both the timing and content of Health promotion, Disease prevention should reflect earlier learning in these core disciplines. The time dependent relationship between these core disciplines is a further expression of the constructivist nature of learning.

The Learning Outcomes Phase I report, with the flexibility of each school to look at level 4 learning outcomes, should reflect the outcomes learnt. The following should be included:
1. the evidence base for Health promotion, Disease prevention
2. the role of primary, secondary and tertiary health care in 'Health promotion, disease prevention
3. the major challenges to change the behaviour of individuals and the population
4. the main causes of inequalities in health
5. the role of local and national health education departments
6. types of prevention strategies

Health Promotion has an initial knowledge base to be acquired coupled with development of skills. It is recognised that the outcome should be introduced and assessed from the start of the course (year 1) and that progression should be mapped throughout the course.

Tools of assessment:

Table 1 is a brief resume of the tools used in to assess 'Health promotion' disease prevention' in the various schools, the validity and reliability of these tools and the associated manpower issues in respect to who generates and marks questions.

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[1] it is appreciated that the method of assessment would influence the mode of learning adopted by the student and as a consequence requires careful consideration.

Table 1: **Modes of assessment, manpower, reliability, validity and markers.**

Mode of assessment	School example	Manpower time		Reliability	Validity	Who Marks
		Generating Assessment	Marking assessment			
Group poster	Aberdeen	+	++	++	++	?
Assignment / Essays MEQ	All schools *Appendix 1*	+	+++	+	++	Expert staff
CRQ SAQ	Dundee *Appendix 2* St Andrews	+++	+++	+++	++	*Expert/ general staff
EMI / MCQs	Dundee *Appendix 3*	+++	+ (if OMR)	+++	++	Computer
Attachment forms on clinical placement	Dundee *Appendix 4*	+	+	+	++	General staff
Group presentation	St Andrews	+	++	++	++	Group
OSCE	Dundee *See appendix 5*	++	+++	+++	+++	General/expert staff
Record of achievement (log book)	Dundee *See appendix 6*	+	++	+	+++	General staff
Oral	Aberdeen *Appendix 1*	+	+++	+	++	?

* Depends on how precise the answers have been defined.

Manpower (best guess)
+   = little time
++   = moderate time
+++   = major time commitment

Validity/reliability (best guess)
+   = low
++   = moderate
+++   = High

Implementation:

Formative and summative assessment / peer assessment.
The summative and formative aspects associated with 'Health promotion, Disease prevention' and the use of peer assessment were felt to be similar with other outcomes and as such were not felt to merit any specific attention.

Who should write and mark the assessment?
Health promotion, Disease prevention specialists (Behavioural scientists and Epidemiologists) rather than general physicians or surgeons should write the questions. Generalists tend to focus on long term clinical management rather than the health of populations. As a consequence questions may not accurately reflect the emphasis of 'Health promotion, Disease prevention'. Who marks the questions is dependent on the type of questions used. Whoever marks the assessments will require appropriate training and support.

Integration
The issue of integration was seen from two competing perspectives: integration is endorsed in order to facilitate student's holistic understanding of issues. However, integration has the potential of minimising the importance and transparency of the outcome. This may be particularly relevant in 'Health promotion, Disease prevention' outcome.
Given the importance the GMC attach to Health promotion, disease prevention it is felt that the assessment of this outcome may benefit by being identified as a special issue in order to make it more prominent. This identification as a topic in its own right may be relaxed in favour of greater integration when its profile has been raised in both the minds of staff and students.

Conclusions:
1) Health Promotion and disease prevention have a lower profile with students than they deserve in terms of their importance in medicine.
2) The definition of what constitutes health promotion, disease prevention still requires greater clarification.
3) Integration may have contributed to the decline in the profile of 'Health promotion, disease prevention'.
4) Assessment is a potentially valuable way of raising the profile of 'Health promotion, disease prevention'.
5) Currently a variety of methods of assessment have been used.
6) The evidence for the validity and reliability of some of the methods may be questioned.
7) Assessment of Health promotion, Disease prevention must recognise the timing and content of teaching in Behavioural Science, Public Health and Epidemiology

Recommendations:
1. Health promotion and disease prevention outcomes should be considered for special attention due to the concerns raised by the GMC.
2. A variety of different assessment methods should be used.
3. All Schools should consider examples included in the appendix.
4. Further work is required to look at other methods of assessment.
5. Further work is required to determine the reliability and validity of methods used to assess the outcomes.

Appendix 1: Health promotion, disease prevention projects

Aberdeen – Phase II Year 3 Project

GROUP A

1. Can the uptake of cigarette smoking among children in the UK successfully be prevented?
2. Should all adults over the age of 65 routinely receive an influenza vaccination each year?
3. Is there a case for routine screening for diabetes in general practice?
4. Are serious infectious diseases becoming more common in the UK?
5. What role does health promotion in workplaces have in improving the health of the nation?
6. Should the legal limit for blood alcohol level when driving in the UK be reduced?
7. What factors need to be considered in evaluating the case for cervical screening?
8. Should the UK government fund the free supply of condoms from high street chemists in the interests of public health?
9. Does care in the community for people with chronic schizophrenia offer a better quality of life than long stay hospital?
10. Is there a case for implementing cardiac rehabilitation in primary care?
11. Has the introduction of seatbelt legislation for private motorists in the UK been an unacceptable infringement of personal freedom?
12. What potential is there for mental health promotion?

GROUP B

1. What makes parents decide to consult their general practitioner about their children's illnesses?
2. Do women really need to stop smoking cigarettes during pregnancy?
3. Is there a case for routine screening for colorectal cancer in general practice?
4. Is hospice care preferable to home care for the dying patient?
5. Is it possible to reduce the number of children in the UK who are scalded in their own homes each year?
6. Is methadone substitution an effective solution to the problem of opiate addiction?
7. 7.Should organised professional and amateur boxing be banned in the UK?
8. Should there be more or less sex education provided for primary schoolchildren in the UK?
9. What is the role of the primary health care team in the management of patients with dementia in the community?
10. Have campaigns to encourage the practice of "safe sex" made any difference in the fight against HIV?
11. Is screening for hypercholesterolemia and its active treatment with statins cost-effective?
12. Is the active treatment of hypertension worthwhile in those over 70 years of age?

Aberdeen marking schedule for year 3 projects

1. Before deciding on the final CAS mark, markers should determine whether the student has fulfilled the specified requirements listed below (Table 1). Students have been informed that failure to fulfil these requirements will result in a significant reduction in the mark awarded. When the number of requirements met has been determined, the marker should refer to Table 2 which shows the MAXIMUM CAS mark which the student's report should be given.

Specified requirement	✓
Text is legible & at least font size 12 or equivalent	
Word count given & within 2,500-3,500 limit	
Abstract included & of no more than 250 words	
No more than 6 tables/figures	
Between 10 & 25 references cited	
References consistent in Vancouver or Harvard style	
Confidentiality protected where appropriate	
No evidence of plagiarism	
TOTAL FULFILLED	

Table 2

Number of requirements met	Maximum CAS mark
8	20
5-7	18
3-4	12
1-2	8

MARKING.SCHEDULES.PIIY3 17 Jan 2001

Please refer to the CAS band descriptors below before deciding on the final mark

CAS BAND	DESCRIPTOR
18-20	Excellent paper. Student demonstrates outstanding ability to critically evaluate primary sources of data based on extensive reading. Evidence of superior understanding and ability to present reasoned arguments leading to appropriate conclusions.
15-17	Very good paper. Student demonstrates clear ability to understand, integrate and summarise relevant information from authoritative sources. Paper more descriptive than critically analytical of primary sources but shows evidence of good grasp and clear presentation of important ideas.
12-14	Good paper. Student demonstrates understanding of important ideas and limited ability to appropriately summarise and integrate information from authoritative sources. Paper reflects more the views expressed by others in the literature than student's analysis.
9-11	Adequate paper. Student demonstrates evidence of having read relevant literature but displays little ability to understand or integrate material read. Paper reflects only partial grasp of important ideas, failure to develop or illustrate points, poorly structured paper and inadequately supported conclusions.
6-8	Inadequate paper. Student demonstrates some attempt to address the question but the paper reflects insufficient reading, poor understanding of important ideas, and extremely limited ability to present arguments leading to valid, reasoned conclusions.
1-5	Clear fail. Grossly inadequate paper demonstrating little attempt to address the question.
0	Token or no submission.

Dundee Case Study in Health promotion, disease prevention

Guidelines given

A Case Discussion for the Prevention Theme should consider the roles of prevention for both the individual and the population. It should draw on the epidemiological literature for evidence for factors which affect health either positively or negatively and, if possible, refer to experimental evidence for the effectiveness of interventions to promote good health mentioned in the Discussion. The Discussion must have a reference list. Your discussion should cover the following areas:

* patient's presentation;
* a discussion of the factors known to be associated with the patient's condition and potentially amenable to preventive measures. There should be references to literature on the evidence for the relation between the factors and the condition;
* evidence for the effectiveness of health promoting interventions at population and individual levels, as appropriate, with literature references;
* application of these measures to the patient in your presentation. Relevance of the measures at population level;
* reference list.

Marking form

Discussions marked with a failed grade E, F or G must be revised and resubmitted by the next deadline for submissions. A pass mark (A, B, C or D) is required before inclusion in your portfolio.

Student Name: Date: Theme (of discussion):   I confirm that this case discussion is my own original work   *Student signature*

Theme Assessor:

Students have been asked to provide a brief (maximum 200 words) summary of their patient's presentation diagnosis and management followed by a discussion (maximum 1000 words) of the chosen theme's contribution to understanding the course of **their** patient's illness/management (see page 13 of the Phase 3, Year 5 Handbook).

Please complete overleaf, marking with a horizontal line [-] the grades, which best describe the attached Case Discussion. Then complete the additional comments section below.

Additional Comments
Does this discussion follow the required format?   Yes ❒   No ❒
Please highlight any major strengths or weaknesses: This form will be used to provide feedback to the student.

Please mark the most appropriate grade with a [-]

	A	B	C	D	E	F
	Excellent	Very good *Pass*	Satisfactory *Minor Defect*	Borderline *Major Defect*	Clear Fail	Marginal Fail

Approach to theme:

	A	B	C	D	E	F
Understanding of theme	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Required information covered	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Absence of errors	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Communication skills:

	A	B	C	D	E	F
Clarity of expression of ideas	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Use of English	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Clarity of patient summary	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Retrieval and handling of information:

	A	B	C	D	E	F
Range of reading	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Use of literature in text	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Format of references	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Clinical reasoning and analytical abilities:

	A	B	C	D	E	F
Relevance of discussion to the particular patient	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Critical and analytical abilities						
in patient summary	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
in discussion	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Appendix 2

CRQ

Osteoporosis wrist fracture

A 68 year old woman presents with Colles fracture. Further investigation confirms the presence of osteoporosis.

1. List three risk factors for osteoporosis

a) female gender
b) age
c) early menopause
d) lack of exercise
e) excess alcohol
f) family history
g) steroid therapy
h) smoking
i) low calcium intake   2 marks

2. What strategies should be adopted to prevent osteoporosis in high
risk individuals

a) HRT
b) Encourage exercise
c) Encourage smoking cessation
d) Adequate calcium intake
e) Moderate alcohol consumption   2 marks

3. At a population level what strategies might reduce the prevalence
of osteoporosis

a) subsidised milk
b) media campaigns to promote exercise and diet

                                                          2 marks

4. What are the challenges to reducing the prevalence of osteoporosis

a) osteoporosis is asymptomatic
b) dietary change difficult
c) promoting exercise in the elderly is difficult
d) mass media campaigns have modest impact   2 marks

Appendix 3

EMI

THEME: **HEALTH PROMOTION**

SUBJECT: **IMPROVING HEALTH BEHAVIOUR**

OPTIONS:

A	Harm reduction programme	F	Refusal skills
B	Increased service provision	G	Education in Schools
C	Mass media campaign	H	Posters in GPs surgeries
D	Increased taxation	I	Brief advice from a doctor
E	Educational leaflet	J	Provision of free condoms

1. Which government action could increase rates of smoking cessation   Answer:D

2. Which intervention can reduce morbidity from illegal drug use   Answer:A

3. Which intervention increases uptake of vaccination   Answer:G

Appendix 4

Attachment forms on clinical placement

The main purpose of this form is to provide feedback to the student on their progress towards the 12 outcomes during this attachment. It should also be used to raise particular concerns about any difficulties the student may be experiencing. Please use the guide to the general areas to be considered under each outcome (see over) and any specific requirements in the study guides for the core clinical problems for which you are the lead attachment. Please use information from a variety of sources such as oral or written patient presentations or other attachment requirements.

A four point grading system is used:

Highly satisfactory:	Student demonstrates a level of general and specific abilities beyond the expected level of attainment.
Satisfactory:	Student attains the expected level of general and specific abilities.
Minor deficiencies:	Deficient in at least one of the general or specific abilities. These deficiencies would be relatively easy to correct.
Major deficiencies:	Deficient in at least one of the general or specific abilities. These deficiencies would require extensive remediation.

For some of the outcomes, particularly for shorter attachments, you may personally find it difficult to grade the student. Where appropriate please utilise information from a variety of staff: where possible this form should reflect discussions with staff and give a consensus decision.

As a minimum please grade Outcome 1, 6 and Outcome 11 (which includes attendance). If it is not possible to assess an outcome please mark N/A.

Please mark the most appropriate scale with a [-]

What a student will be able to do	Highly Satisfactory	Satisfactory	Minor Defect	Major Defect
1. Competent in clinical skills	[ ]	[ ]	[ ]	[ ]
2. Competent to perform practical procedures	[ ]	[ ]	[ ]	[ ]
3. Competent to investigate a patient	[ ]	[ ]	[ ]	[ ]
4. Competent to manage a patient	[ ]	[ ]	[ ]	[ ]
5. Competent to give advice on health promotion and disease prevention	[ ]	[ ]	[ ]	[ ]
6. Competent in communication skills	[ ]	[ ]	[ ]	[ ]
7. Competent to retrieve and handle information	[ ]	[ ]	[ ]	[ ]
How the student approaches their practice				
8. Understanding of social, basic and clinical sciences and underlying principles	[ ]	[ ]	[ ]	[ ]
9. Appropriate attitudes, ethical understanding and legal responsibilities	[ ]	[ ]	[ ]	[ ]
10. Appropriate decision making skills and clinical reasoning and judgement	[ ]	[ ]	[ ]	[ ]
The student as a professional				
11. Appreciation of the role of the doctor within the health service	[ ]	[ ]	[ ]	[ ]
12. Aptitude for personal development	[ ]	[ ]	[ ]	[ ]

If any of the grades indicate a minor deficiency please expand in the comments overleaf.
<u>**Method of Assessment:**</u>

Please indicate by tick on which basis this form was completed

Written examination ☐   **Case presentation** ☐   **Personal observation** ☐   **Log books** ☐

It will not be possible in relation to the curriculum outcomes to comment on all the criteria described in relation to each student during their attachment.

Potential areas of relevance

What a student is able to do:
Competent in clinical skills
- medical and social history
- physical examination
- interpretation of findings
- differential diagnosis
- formulation of action plan

Competent to perform practical procedures
- relevant **diagnostic** procedures
- relevant **therapeutic** procedures
- (See practical procedures checklist in Outcomes Achievement
- Record)

Competent to investigate a patient
- relevant investigations
- cost considerations
- appropriate ordering procedures
- interpreting the findings

Competent to manage a patient
- considers a wide range of treatments (e.g. surgery, rehabilitation)
- referrals
- drug therapy
- follow-up

Competent to offer advice in health promotion and disease prevention
- consideration of risk factors
- threats to the health of the community
- advice to patients regarding risk factors and health promotion

Competent in communication
- communication with patients and their families
- communication with staff and with health care colleagues
- general communication skills (presentations, written, teaching)

Competent to retrieve and handle information
- prepare and evaluate patient records
- access data sources appropriately
- uses computers when appropriate
- manages personal records effectively

How the student approaches their practice:
Understanding of basic, clinical and social sciences and underlying principles
- normal structures and functions
- pathophysiology
- psychosocial model
- economics of health
- life cycle

Appropriate attitudes, ethical understanding and legal responsibilities
- identifies important legal and ethical issues
- applies legal and ethical procedures where appropriate (e.g. informed consent, confidentiality)
- sensitive to multi-cultural and psychosocial factors
- acts as patient advocate

Appropriate decision making skills and clinical reasoning and judgement
- strategic thinking
- clinical reasoning
- critical analysis of information
- research and statistical methods

Student as a professional:
Appreciation of the role of the doctor within the health service
- professional behaviour (attendance, task on time, respects colleagues)
- understands role of healthcare staff
- effective team member
- accepts code of conduct

Aptitude for personal development
- self-learner
- assess his own performance
- responsibility for his own personal and professional development.
- effective self learner
- reflect on own strengths and weaknesses
- manages time effectively
- achieve high standards of professionalism

Comments

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Appendix 5

OSCE

OSCE Station

This OSCE is conducted as an oral. The student will be asked the following questions:

1. Identify a case from your Record of Achievement (either in the patient record section or pages 30-36 of the ROA) in which issues relating to health promotion / disease prevention have been discussed.

2. **Briefly** summarise the relevant risk factors for the main clinical problem from which the patient was suffering.

3. Indicate the strategies which might have prevented the condition in this individual.

4. Suggest population-based strategies to prevent the problem in other individuals who may be at risk of it.

5. Which professions or agencies may be involved in this risk reduction process?

Appendix 6

Log book/Portfolio

The following instructions are given under the Health promotion, Disease prevention outcome.

Exert from a Year 2 and 3 Record of Achievement - Dundee
From the patients you have seen in your clinical practice or in clinical skills, please describe in the boxes below where issues relating to health promotion disease prevention have been discussed. Use the following headings:
Diet, exercise, smoking, screening, occupational, prophylactic treatment, social behaviour, infection control.

Assessment
Part of an OSCE station where questions regarding the cases may be discussed.

Learning outcomes for Medical Informatics

Collecting, storing and using information has always been an integral part of the practice of medicine. It has, however, become more complex and technology-based thereby creating an increasing need for medical graduates to be competent in basic information handling skills ranging from simple record-keeping to accessing and using computer-based data. As well as having the technical skills to undertake such tasks it is important that graduates appreciate the role of informatics in the day-to-day care of patients and the advancement of medical science in general.

	This could include:
Keeping patient records	*Maintaining high quality of recording (whether in writing or on computer); accuracy and data quality; legibility.* *Knowledge of:* *the different types of records and how records are stored and retrieved (manually and electronically);* *coding and classification;* *confidentiality – including legislation governing access to medical records and data.*
Accessing data sources	*Using library and other systems to access data and information from sources such as computerised databases and the Internet.* *How routinely collected health information is used in service planning and delivery of care.* *Using information in evidence-based practice.* *Identifying and using professional guidelines.*
IT Skills / Computing skills	*Use of E-mail, word-processing, databases, statistical packages, spreadsheets, Medline / BIDS and on-line journals, etc.*
Personal record keeping for professional development	*The role and use of log books and portfolios.*

Assessment of these outcomes:

General issues regarding Medical Informatics:

Informatics is an important outcome. Students require informatics skills to access, make a value judgement and manipulate data. These are life long skills that will be utilised irrespective of the chosen speciality. For example, it is more important to know how to use the BNF rather than recall a specific drug and its modes of action. The majority of drugs of the future will vary from those used in current practice. As one colleague stated "In the near future Medical Informatics will become so important it will be as debilitating as not being able to read and write if you can not handle basic medical informatic principles – it might possibly be considered as negligent practice".

The importance of informatics as an outcome can also be seen in the increased amount of information that Medics are required to assimilate and record and improvements in technology to process and record this data.

The process of post-graduate re-validation requires an appreciation and skills in personal record keeping for professional development, this should be embedded in an undergraduate setting.

There is a danger of defining Informatics as IT skills rather than considering the broader aspects. Informatics is comprised of 4 distinct areas (Scottish Deans document, page 8) which potentially merits from different forms of assessment:
- Keeping patient records
- Accessing data sources
- IT/Computing skills
- Personal record keeping for professional development

One school felt that there was little reference to Learning to use Health Information and another stated that the list required expansion.

The idea of IT as a 'conditional assessment' was discussed. It was plain that in a number of assessments, particularly in later years of medical courses, IT is present as a 'tacit' component. This means that it is non-explicitly required, and if it is poorly carried out, credit is lost. However, if it is carried out above a minimum level, then it does not feature in the assessment grading protocol: instead other considerations are employed in reaching a grade.

"Informatics" requires to be assessed.
To test competence
To give students an appreciation of future postgraduate requirements regarding personal record keeping.

Assessment of informatics was felt to be developmental in nature. With the use of more formal and explicit assessments of informatics abilities conducted in early years, while in later years, it was an implicit part of reports, assignments, case reports etc. It was recognised that the outcomes should be introduced and assessed from the start of the course (year 1) and that progression should be mapped throughout the course.

Current tools of assessment:

Table 1 is a brief resume of the tools used in to in the various schools depending on the level 3 outcome to be assessed, the validity and reliability of these tools and the associated manpower issues in respect to who generates and marks questions.

The validity of using project work to indirectly assess the ability of students to access data sources may be becoming increasingly untenable given reported incidences of copying material. In-correct referencing of data sources potentially undermines a students work and guidelines should be given in year 1.

Assessment material should reflect actual 'real time' patients that should be randomly checked. Real time patients may reduce the degree of copying although it is acknowledged that common clinical complaints will occur in any time period.

Table 1: **Modes of assessment, manpower, reliability, validity and markers.**

Mode of assessment	School example	Manpower time		Reliability	Validity	Who Marks
		Generating Assessment	Marking assessment			
Clinical attachment forms	*Dundee* *See appendix 1*	+	++	+	+	General staff
Keeping patient records Log book Part of exam	*Dundee* *See appendix 2* *Glasgow*	+	+++	+	++	General staff
Accessing data sources and IT skills / computing skills (*Embedded in course work - assignment, projects, posters*) Certificate of competence (year 1)	*Glasgow* *Aberdeen* *St Andrews* *Dundee* *See appendix 3* *Glasgow*	+ +	+++ +++	+	+	General staff
Personal record keeping for professional development Log books Portfolio	*Dundee* *See appendix 4*	+	+++	+	?	General staff

* Depends on how precisely the answers have been defined.

Manpower
+ = little time
++ = moderate time
+++ = major time commitment

Validity/reliability
+ = low
++ = moderate
+++ = High

New tools of assessment:

IT skills (European Computer Driving License)

Currently the majority of methods for assessing 'IT skills' are embedded within course work. However, recently the European Computer Driving Licence (ECDL) has been introduced as a potential mechanism of improving IT skills in the work place. "The EDCL certifies that the holder has knowledge of the basic concepts of Information Technology (IT) and is able to use a personal computer and common computer applications at a basic level of competence. In practice the ECDL certificate indicates that the holder has passed one theoretical test that assesses his or her knowledge of the basic concepts of Information Technology (IT), and six practice-based tests which assess the holder's basic competence in using a personal computer and working with common computer applications." (Taken from http://www.ecdl.com/). More information can be found in appendix 5.

One school felt that the EDCL is much too basic, not targeted to the needs of the MBChB student, was very static and the took too long to complete.

IT skills

One suggestion was an OSCE station in the form of a Medline link, associated with a scenario-based problem which the students were required to address.

Patient record keeping (simulated or real wards)

The keeping of patient records is currently difficult to determine, as students do not write in actual patient notes or write up Kardex's. The use of a simulated or real ward where students are required to complete notes would be especially valued. This has been piloted in Dundee.

Implementation:

Integration

Preliminary thoughts were that Medical Informatics might be more suitable to preliminary competence based skill assessments (e.g. establishing that the students could use Med Line, statistics packages etc.) coupled with subsequent integrative assignments (e.g. exploring whether the students could carry out and report an investigation into a topic, using databases and evidence based sources, word processing and presentational skills).

It was generally agreed that many aspects of informatics were often embedded within other topics, rather than treated as a separate outcome. This was not seen as being detrimental where demonstration of embedded skill acquisition was seen as appropriate.

Aspects of informatics are readily assessed by the production and presentation of material.

Who should devise and mark assessment?

Although the assessment tools should be devised by person's experienced in informatics the marking of the outcome could be performed by generalists. For personal patient record keeping it was felt that clinicians were in a more favourable position to make judgements on informatics skills.

Conclusions

IT and accessing data sources is a tool, not a goal. It is often embedded within other topics, rather than treated as a separate item.

The challenge of assessing a student's ability in IT and accessing data sources is ensuring that the actual student conducted the work. The potential of copying information, or down loading from the web, is acknowledged.

The use of an OSCE station is seen as one method of reliably testing a student's ability, for example conducting an appropriate Med line search, or manipulating data using excel.

Methods of assessing student ability to 'access data sources' and 'IT skills' are available. Time to assess these skills rather than the lack of tools is seen as the major problem.

Assessment of patient and personal record keeping is currently under assessed.

Recommendations:

Each school needs to consider the balance between equipping students with life long learning skills and knowledge for the moment. A commitment to assessing informatics skills and enhancing the priority given to the development and assessment of these skills need to be made.

More valid and reliable methods of assessing 'keeping patient records' and 'personal record keeping for personal development' need to be devised.

The Scottish Dean's group should discuss the use of the ECDL to test IT competence in order to give high level guidance to the schools.

Appendix 1

Clinical Attachment Form (Dundee)
The main purpose of this form is to provide feedback to the student on their progress towards the 12 outcomes during this attachment. It should also be used to raise particular concerns about any difficulties the student may be experiencing. Please use the guide to the general areas to be considered under each outcome (see over) and any specific requirements in the study guides for the core clinical problems for which you are the lead attachment. Please use information from a variety of sources such as oral or written patient presentations or other attachment requirements.

A four point grading system is used:

Highly satisfactory: Student demonstrates a level of general and specific abilities beyond the expected level of attainment.

Satisfactory: Student attains the expected level of general and specific abilities.

Minor deficiencies: Deficient in at least one of the general or specific abilities. These deficiencies would be relatively easy to correct.

Major deficiencies: Deficient in at least one of the general or specific abilities. These deficiencies would require extensive remediation.

For some of the outcomes, particularly for shorter attachments, you may personally find it difficult to grade the student. Where appropriate please utilise information from a variety of staff: where possible this form should reflect discussions with staff and give a consensus decision.

As a minimum please grade Outcome 1, 6 and Outcome 11 (which includes attendance). If it is not possible to assess an outcome please mark N/A.

Please mark the most appropriate scale with a [-]

What a student will be able to do	Highly satisfactory	Satisfactory	Minor Defect	Major Defect	*N/A*
1. Competent in clinical skills	[ ]	[ ]	[ ]	[ ]	[ ]
2. Competent to perform practical procedures	[ ]	[ ]	[ ]	[ ]	[ ]
3. Competent to investigate a patient	[ ]	[ ]	[ ]	[ ]	[ ]
4. Competent to manage a patient	[ ]	[ ]	[ ]	[ ]	[ ]
5. Competent to give advice on health promotion and disease prevention	[ ]	[ ]	[ ]	[ ]	[ ]
6. Competent in communication skills	[ ]	[ ]	[ ]	[ ]	[ ]
7. Competent to retrieve and handle information	[ ]	[ ]	[ ]	[ ]	[ ]
How the student approaches their practice					
8. Understanding of social, basic and clinical sciences and underlying principles	[ ]	[ ]	[ ]	[ ]	[ ]
9. Appropriate attitudes, ethical understanding and legal responsibilities	[ ]	[ ]	[ ]	[ ]	[ ]
10. Appropriate decision making skills and clinical reasoning and judgement	[ ]	[ ]	[ ]	[ ]	[ ]
The student as a professional					
11. Appreciation of the role of the doctor within the health service	[ ]	[ ]	[ ]	[ ]	[ ]
12. Aptitude for personal development	[ ]	[ ]	[ ]	[ ]	[ ]

If any of the grades indicate a minor deficiency please expand in the comments overleaf.
Method of Assessment:

Please indicate by tick on which basis this form was completed

Written examination ☐   Case presentation ☐   Personal observation ☐   Log books ☐

It will not be possible in relation to the curriculum outcomes to comment on all the criteria described in relation to each student during their attachment

Potential areas of relevance

What a student is able to do:
Competent in clinical skills
- medical and social history
- physical examination
- interpretation of findings
- differential diagnosis
- formulation of action plan

Competent to perform practical procedures
- relevant **diagnostic** procedures
- relevant **therapeutic** procedures
- (See practical procedures checklist in Outcomes Achievement Record)

Competent to investigate a patient
- relevant investigations
- cost considerations
- appropriate ordering procedures
- interpreting the findings

Competent to manage a patient
- considers a wide range of treatments (e.g. surgery, rehabilitation)
- referrals
- drug therapy
- follow-up

Competent to offer advice in health promotion and disease prevention
- consideration of risk factors
- threats to the health of the community
- advise to patients regarding risk factors and health
- promotion

Competent in communication
- communication with patients and their families
- communication with staff and with health care colleagues
- general communication skills (presentations, written, teaching)

Competent to retrieve and handle information
- prepare and evaluate patient records
- access data sources appropriately
- uses computers when appropriate
- manages personal records effectively (logs, portfolios)

How the student approaches their practice:
Understanding of basic, clinical and social sciences and underlying principles
- normal structures and functions
- pathophysiology
- psychosocial model
- economics of health
- life cycle

Appropriate attitudes, ethical understanding and legal responsibilities
- identifies important legal and ethical issues
- applies legal and ethical procedures where appropriate (e.g. informed consent, confidentiality)
- sensitive to multi-cultural and psychosocial factors
- acts as patient advocate

Appropriate decision making skills and clinical reasoning and judgement
- strategic thinking
- clinical reasoning
- critical analysis of information
- research and statistical methods

Student as a professional:
Appreciation of the role of the doctor within the health service
- professional behaviour (attendance, task on time, respects colleagues)
- understands role of healthcare staff
- effective team member
- accepts code of conduct

Aptitude for personal development
- self-learner
- assess his own performance
- responsibility for his own personal and professional development.
- effective self learner
- reflect on own strengths and weaknesses
- manages time effectively
- achieve high standards of professionalism

Comments

Appendix 2

Keeping patient records

Dundee Record of Achievement
Information given to year 2 and 3 students:
Twelve outcomes have been devised for the undergraduate curriculum. These outcomes have been introduced in Phase 1. The outcomes will be further developed in Phase 2 and competency will need to be demonstrated by the end of Phase 2. The record of Achievement includes your patent record book and video consultations and outcome activities.

Patient record book
You are required to complete a minimum of 5 patient's records in year 2 and 12 patient records in year. Each will consist of:
- A complete history
- An examination
- A structured therapeutic report
- A summary of key lessons learned from the case

Appendix 3

Accessing data sources and IT computing skills

Assignment Criteria (Aberdeen)

Outline Plan

1. Title of Paper

2. Summary of main issues likely to be addressed.

3. Sources of information (how will information be accessed?, how will relevance be accessed?, how will significance of information be appraised?)

4. Outline of tasks to be completed and suggested timescale for completion.

5. Difficulties anticipated and other points for discussion with tutor.

PAPER PREPARATION - *Guidance for students (Aberdeen)*

Necessary Requirements

Two copies of the paper must be submitted. Papers must be wordprocessed, typed or hand-written in a **clearly legible** manner. **Font size 12** or its equivalent must be used. Papers **must be** within the prescribed word limits of **2,500-3,500**. A **word count** of the body of the paper (i.e. excluding front page, abstract, and references) **must** be given on the front page. A maximum of **6** tables/figures is permitted. A list of **10 to 25** *key* references should be included at the end of the paper and these should cite **primary sources actually read** rather than papers cited in other texts. Your name should be included on the **front page only** and your matriculation number included **on all pages** of the paper.

NOTE *Failure to adhere to these requirements is likely to result in failure of the whole degree assessment or a significant reduction in the mark awarded.*

Front Page

This should include the paper's title, your name, matriculation number and **word count**.

Abstract

An abstract of **no more than 250 words** should be included with the following headings: introduction, methodology (used to research the literature), results, conclusions. (see BMJ review article for example).

Tables/figures

A maximum of six tables/figures should be cited in order and placed in the body of the text as close to the point of citation as possible. Tables/figures should be identified by Arabic numerals, be simple to interpret and not duplicate information contained in the text of the paper. Titles of tables/figures should be brief but contain a clear and complete explanation of what the data represent. Where a table/figure is reproduced exactly from published source the reference for that source should be given in brackets under the title.

Confidentiality

Where reference is made to real patients e.g. by way of case illustration, it should be made clear that appropriate measures have been taken to protect the anonymity of those patients.

Plagiarism

Faculty policy on plagiarism will apply. Plagiarism is the substantial use, without acknowledgement and with intent to deceive examiners or knowing that the examines might be deceived, of the intellectual work of other people by representing, whether by copying or paraphrase, the ideas or discoveries of another or others as one's own in work submitted for assessment. The mere inclusion of the source in a bibliography shall not be considered sufficient acknowledgement.

All quotations must be distinguished by quotation marks and sources of information must be specifically acknowledged.

References

A **m i n i m u m** of 10 and **m a x i m u m** of 25 *key* references should be cited in the paper.

References may be in **either** the **Vancouver** or **Harvard** style but **must be consistent** in style throughout the paper and reference list.

Vancouver style

References should be numbered in the order in which they appear in the text. These numbers should be inserted above the line on each occasion a reference is cited (e.g. confirmed by other studies[23]). Numbered references should appear at the end of the paper and should consist of the surnames and initials of *all* authors when *six or less,* when *seven* or more list the *first three* and add et al.; title of the article; name of journal abbreviated according to *Index Medicus* style; year of publication; the volume number; and the first and last page numbers e.g:

10. Brown GW, Moran P. Clinical and psychosocial origins of chronic depressive episodes. I: a community survey. Br J Psychiatry 1994;165:447-56

References to books should give the names of any editors, place of publication, publisher and year e.g:

21. Osler, AG. Complement: mechanisms and functions. Englewood Cliffs: Prentice Hall, 1976

Harvard style

In the text the author's name and date should be used as follows:

"...low rates of continuous long term abstinence have been reported (Lichtenstein and Rodrigues 1977) "or" Blinkhorn (1978) found no evidence of this."

No more than two authors should be cited per reference; if there are any more than two use "et al". Several references to the same author(s) in one year are shown as 1997a, 1997b etc.

Where a number of references appear together in the text, they should be in order of publication.

The list of references at the end of the paper should be arranged alphabetically by surname of the first author. For journal articles give the surnames and initials of all authors, year of publication, title, full name of journal, volume, and pages e.g:

McLain, B., Cartlidge, MA.,(1988) Collaboration practice : a critical theory, Research in Nursing and Health, 11, 391-398.

For references to books or book chapters give the name of the book (or chapter) authors, year of publication, title, (where appropriate authors or editors of book), place of publication, and publisher e.g :

Howie, JGR., (1979) Research in General Practice. Beckenham, Kent: Croom Helm.

Case Discussion Criteria (Dundee)

Discussions marked with a failed grade E, F or G must be revised and resubmitted by the next deadline for submissions. A pass mark (A, B, C or D) is required before inclusion in your portfolio.

<div style="border:1px solid black; padding:10px;">

Student Name: Date:

Theme (of discussion):

I confirm that this case discussion is my own original work

Student signature

</div>

Medical School Office: Date received: _____
                                                    Date Due: _____
                                                    Late submission: Yes ❐   No ❐

Theme Assessor:

Students have been asked to provide a brief (maximum 200 words) summary of their patient's presentation diagnosis and management followed by a discussion (maximum 1000 words) of the chosen theme's contribution to understanding the course of **their** patient's illness/management (see page 13 of the Phase 3, Year 5 Handbook).

Please complete overleaf, marking with a horizontal line [-] the grades, which best describe the attached Case Discussion. Then complete the additional comments section below.

<div style="border:1px solid black; padding:10px;">

Additional Comments

Does this discussion follow the required format?   Yes ❐   No ❐

Please highlight any major strengths or weaknesses: This form will be used to provide feedback to the student.

</div>

Final Grade
(<u>for office use only</u>)

Signature _____ Date _____

Please mark the most appropriate grade with a [-]

	A Excellent	B Very good	C Satisfactory	D Borderline	E Marginal Fail	F Clear Fail
Approach to theme:						
Understanding of theme	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Required information covered	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Absence of errors	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Communication skills:						
Clarity of expression of ideas	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Use of English	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Clarity of patient summary	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Retrieval and handling of information						
Range of reading	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Use of literature in text	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Format of references	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Clinical reasoning and analytical abilities:						
Relevance of discussion to the particular patient	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Critical and analytical abilities -						
in patient summary	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
in discussion	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Phase 1 SSM report (Dundee)

Information given to year 1 students regarding submission of special study module assignment:

30% of marks

Demonstration of IT skills (including standard of word processing, proof reading, evidence of internet sources and/or Medline to access information).

Appendix 4

Personal record keeping for professional development

Purpose of the Portfolio Assessment
The purpose of the final year assessment is to determine, in line with the GMC guidelines, that the student is ready to proceed to the Pre-registration House Officer (PRHO) year.

Content of Portfolio

- ❑ Patient Presentations (10 from Year 4)
- ❑ Case Discussions (7 from Year 5)
- ❑ Year 4 Assignment (report and assessment form)
- ❑ Record of Achievement
- ❑ Clinical SSMs – outcome assessment forms and any written material
- ❑ Theme SSMs – outcome assessment forms and any written material
- ❑ PRHO Learning Plans (Medicine and Surgery)
- ❑ Elective Report and assessment form
- ❑ Any additional material which you feel is helpful in illustrating your progress towards the curriculum outcomes in Phase 3.

Organisation of the Portfolio

- ❑ The organisation of your portfolio is an opportunity for you to demonstrate to maximum effect your progress towards the 12 curriculum outcomes.
- ❑ An index to the content described above must be provided and the portfolio presented in an A4 binder: you should not use document wallets, and you should also avoid placing multiple pages within a single plastic document holder.
- ❑ The index should be followed by 12 single sides of A4, each headed with one of the curriculum outcomes. Under each outcome heading, analyse your experience relevant to that particular outcome, and summarise the evidence to be found within the portfolio which demonstrates your progress towards the outcome.

Record of Achievement

You must complete the Record of Achievement before your portfolio is submitted at the end of the year. Please note that competence to perform practical procedures is an essential outcome of the curriculum, and you must look after your Record of Achievement carefully: you will not be permitted to take the Year 5 portfolio examination without a completed Record of Achievement. Consider making a regular photocopy in case of loss. Continue to have procedures signed off during the clinical attachments.
It is recognised that some students will have occasional gaps in their experience through lack of opportunity. Students must inform the Medical School Office of potential gaps before the 30 March 2001. It is intended that there will be opportunities to complete these skills during the PRHO preparation block at the end of the year.

In Course Assessment Forms

Your PRHO apprenticeship learning plan and completed assessment forms, and the assessment forms from your theme-based, clinical and GP SSMs are an essential part of your portfolio. Make a copy of your learning plan and Clinical SSM forms before submitting them to the Medical School Office. A copy of your Theme SSM and GP SSM assessment forms can be obtained from the Medical School Office 4 weeks after the end of the block.

Portfolio Review and Assessment

During Phase 3, all students prepare a portfolio of their work which describes how they have progressed to achieve the twelve curriculum outcomes.

The Portfolio is received on the due date and checked by the Medical School Office staff for completeness and a receipt issued. The Portfolio should be submitted in the format set out in the Phase 3 – Year 5 Handbook (pp 12-15) as follows (see appendix 2).

- It should be in an A4 binder
- There should be an index to the required material
- This should be followed by 12 pages, one directed to each of the outcomes, summarising the experience and personal progress relevant to that particular outcome and the supporting evidence to be found within the portfolio

Portfolio Assessment Interview

Guidance to Examiners

Although students presenting for their portfolio assessment interviews will have demonstrated differing levels of performance within their portfolio material, it is desirable that there should be a standardized approach to the oral assessment.

In conducting the interview, examiners should endeavour to determine the following:

Areas of strength within the portfolio

To identify these, the student should first be asked to self-select pieces of work within the portfolio which demonstrate his or her strengths. The student should describe the special value of these self-selected learning experiences.

Outcomes requiring further development

It is important that students should be aware of their own future learning needs. In the interview, they should be asked to reflect on learning objectives which they will set themselves in their PRHO years and to illustrate particular challenges identified in their portfolios.

Aspects of the portfolio requiring clarification

Examiners will identify components of the portfolio, which they will wish to explore with the students in greater detail. This further exploration may be directed towards areas of possible weakness or aspects of excellent performance.

In all of the above, examiners are encouraged to focus on work which has been submitted by the students within their portfolios.

Following the oral assessment, examiners should adjust their pre-oral marks up or down as appropriate to reach a jointly agreed grading for each outcome.

Guidance to Students

The examination will follow a common process as outlined above, but the content will be tailored for each individual student – all the portfolios are different, and students differ in their strengths and weaknesses.

Questions will be directed to establishing the level of competence in the different outcomes. The material in the portfolio, rather than the examiner's particular area of expertise, will form the basis of the examination.

In some oral examinations a third, external examiner will be present as an observer. An important function of this third examiner is the assessment of consistency of standards across the examination.

Appendix 5

The European Computer Driving Licence *(taken from http://www.ecdl.com/syllabus/index.html)*

The European Computer Driving Licence is an internationally accepted certificate. It can simplify employment procedures and assure the employer that applicants and staff have the necessary level of knowledge and competence to use common computer applications. The ECDL is a certificate of knowledge and proven competence and is based on a single agreed Syllabus.

The overall objective of the ECDL programme is an improvement in the level of basic knowledge about Information Technology (IT) and a higher level of basic competence in using personal computers and common computer applications throughout Europe and internationally.

The ECDL is deployed and monitored by the European Computer Driving Licence Foundation (ECDL-F). The role of the Foundation is to promote and co-ordinate the development of the ECDL concept. The ECDL-F is the guarantor of the ECDL standard and the Foundation ensures that the ECDL is administered in an equitable manner throughout Europe and internationally. Its role has now developed to cover the International Computer Driving Licence (ICDL).

The European Computer Driving Licence Foundation was formed to co-ordinate the introduction and operation of the ECDL concept throughout Europe. The ECDL concept is owned by the ECDL Foundation. The Foundation is a not for profit organisation that licences a national Licensee to use the ECDL concept and establish an ECDL dissemination programme in that country. Within Europe the national Licensee must be a member of the Council of European Professional Informatics Societies (CEPIS). Outside Europe the ECDL Foundation will licence organisations qualified by the ECDL Foundation as Licensees.

[1] References within this document to European Computer Driving Licence (ECDL) include the International Computer Driving Licence (ICDL). ECDL Foundation Syllabus Version 3.0 is published as the official Syllabus for use within the European Computer Driving Licence (ECDL) and International Computer Driving Licence (ICDL) certification programmes.

[2] Personal computer as a term within this document is intended to mean any brand of personal desktop or portable computer.

Objectives of the ECDL
- To promote and encourage computer literacy for all
- To raise the level of knowledge about Information Technology (IT) and the level of competence in using personal computers and common computer applications for all citizens within Europe and internationally
- To ensure all computer users understand best practices and the advantages of using a personal computer
- To increase the productivity of all employees who need to use computers in their work
- To enable better returns from investments in Information Technology (IT)
- To provide a basic qualification which will allow all people, regardless of their background, to be part of the Information Society

Benefits of the ECDL
Today, computer skills are increasingly important to people in all walks of life. The ECDL is an information technology certificate for all citizens. It is intended for those who need to, or wish to, know how to use a personal computer. It is suitable for people from every work discipline, for people entering the job market, and for all ages. Some of the benefits of the ECDL are that it provides:
- An IT skills qualification for everyone
- An innovative and tangible method of skills measurement and validation
- A model for education and training in the Information Society
- A highly effective training delivery model
- Greater public awareness of the benefits of active participation in the Information
- A flexible and accessible qualification that offers increased mobility to holders

Assessment of outcomes for Basic, Social and Clinical Sciences and Underlying Principles.

The Learning Outcomes for Basic, Social and Clinical Sciences and Underlying Principles

The competent graduate recognises, explains and manages health problems using the principles of current scientific knowledge and understanding that underpin medicine.

This could include:

Normal structure and function of the individual as an intact organism and of each of its major organ systems	*Anatomy, physiology, biochemistry, genetics.* *Molecular, biochemical and cellular mechanisms that are important in maintaining homeostasis*
The life cycle	*The different stages and how these affect normal structure and function e.g. the foetus; the neonate / infant; childhood; adolescence; adulthood; old age; death.*

Behaviour and relationships between an individual and his/her:
    Family / partners
    Immediate social groups
    Society at large and the general population
    Physical environment
	Behavioural sciences, psychology and sociology

The causes of diseases and the ways in which these diseases affect the body (pathogenesis)	*Knowledge and understanding of the following causes of disease: genetic, developmental, metabolic, toxic, microbiological, autoimmune, neoplastic, degenerative, traumatic, environmental, social, occupational.*
The alteration in structure and function of the body and its major organ systems resulting from various diseases and conditions	*Appropriate pathology and pathophysiology.*
Pharmacological principles of treatment using drugs	*Pharmacokinetics and pharmacodynamics.* *Mechanisms of action / interaction.* *Side effects / adverse reactions.*
Principles of therapeutic measures in the management and symptomatic relief of diseases	*Drugs, surgery, complementary therapies.* *Evidence base for use of therapeutic measures.*
Public health	*Knowledge and understanding of scientific reasoning in the practice of public health in the NHS.* *Principles of healthcare planning, prioritisation of service and communicable disease control.*
Health economics	*Knowledge and understanding of basic concepts including the cost of patient management to NHS and society and rationing.*
Disease prevention	*Knowledge and understanding of causes of disease and evidence of causes.* *Disease aetiology and relationships between risk factors and disease – high risk approach and population approach*
Epidemiology	*Knowledge and understanding of principles of demography, biological variability and clinical trials.*
Education	*Knowing about and applying basic theories of learning and teaching.* *Basic organisation of medical teaching and training in the UK.*

Assessment of these outcomes:

Why choose to assess our medical undergraduates?

There are many reasons why an assessment should be carried out. Any one-assessment instrument will fulfill one or more of these reasons depending on the purpose of that assessment. No one assessment is likely to meet all or even most of the following:

- Grade or rank students
- Pass or fail students
- Provide feedback to students to facilitate their self-directed learning
- Motivate students
- Consolidate learning
- Provide feedback to teachers on the effectiveness of our course(s)
- Provide information / a means of validating students to an external regulatory body such as the General medical Council
- Provide reassurance and confidence to the public of the competence of graduates
- Guide selection / option choice
- Prompt student learning (intended or not)

Why assess "Outcomes for Basic, Social and Clinical Sciences and Underlying principles"

The document produced by the Scottish Deans' Medical Curriculum Group: "Learning Outcomes for the Medical Undergraduate in Scotland: A foundation for competent and reflective practitioners." Details the following under this outcome:

- The competent graduate recognises, explains and manages health problems using the principles of current scientific knowledge and understanding that underpin medicine.

This implies and recognizes the need in any curriculum to have a reliable and valid instrument to assess knowledge and understanding given the major contribution that it plays in competence. It is of fundamental importance for students to have a thorough understanding of the extent and limits of their knowledge. This knowledge underpins and provides the foundations upon which the graduate will carry out their professional practice.

The GMC in Tomorrow's Doctor has provided a number of recommendations, which are of relevance to assessment and specifically to the assessment of this outcome, namely:

- "The core, aimed as it is at equipping the newly qualified doctor to begin the pre-registration house officer post, must be tested rigorously, in the interests of the public and of the integrity of professional standards. "

- **" We would recommend the development of a system of progressive assessment that monitors the acquisition and utilization of core knowledge, that explores the attitudes, and that requires certification of the achievement of competence in skills demanded by the course."**

- " Such a process of progressive assessment as a major determination of qualification represents a departure from the traditional pattern of final examination. For the purpose of the Medical Act, the assessments will come within the definition of "qualifying examinations". Because of the significance in terms of qualifying, careful monitoring of the achievements of individuals students will be necessary.

The following are additional arguments for assessing this outcome:

- The need for a vehicle to provide students with on-going feedback of their core knowledge acquisition with the purpose of monitoring their progress and maintenance of already acquired knowledge. This will allow the student to enhance their self learning skills in identifying their ongoing strengths and weaknesses across the curriculum
- The need to create a common understanding among faculty and students leading to greater clarity of what is expected of the students at each level of their education, with respect to the core elements of the undergraduate course.
- The need to produce an evolving benchmark for quality control, for students in each year of the curriculum, for faculty and for other stakeholders in the medical undergraduate courses.

What should be assessed?

The assessment should address core knowledge and principles as laid out in the document produced by the Scottish Deans' Medical Curriculum Group: "Learning Outcomes for the Medical Undergraduate in Scotland: A foundation for competent and reflective practitioners". This has a list of sub-headings which breakdown the outcome into categories of knowledge that are desirable for the student to possess at the time of graduation.

The knowledge that is appropriate to assess and validate is that which is deemed "core". The definition of the "core" and exactly what constitutes core will vary between institutions and individuals within that institution. For the purposes of this report, "core" can be defined as:

> "that knowledge which is essential for every medical graduate to have at the time of graduation, for subsequent entry into the PRHO year and to provide the foundation for later postgraduate education."

It would be inappropriate in a National document to further define core beyond the above definition and sub headings created by the principal document. However each institution must define what constitutes core, in order that this can provide the basis for the content of the following proposed assessment(s).

What else is relevant to the assessment of this outcome?

Any assessment developed must be so designed so as to encourage deep learning of the material and understanding rather than superficial or rote learning. Ideally the assessment will encourage self-directed student learning and not have a major steering effect on individual students learning. The ability of an assessment to encourage self directed learning is of significant importance given the need for graduates to develop positive attitudes and techniques of life-long learning particularly so that they can continue to

> "recognise, explain and manage health problems using the principles of current scientific knowledge and understanding that underpin medicine."

The assessment of this outcome should ensure that graduates are able to achieve integration of basic, social and clinical science into a clinical context and the process of medical care. It is essential that assessment instruments employed to judge students under this outcome are consistent with the final objective of the undergraduate medical curriculum. That is graduates of Scottish Medical Schools require to use their knowledge of basic, clinical and social sciences to support their understanding of clinical problems. In order for this to implemented, assessment of this outcome must include instruments which allow the student to demonstrate their knowledge through the context of a clinical problem or task. Ideally, using such tools as Portfolios would allow the students to reflect on how their progress in acquisition of knowledge has allowed them to improve their skills in patient assessment, investigation and management.

Through participation in Special Study Modules and other curricular elements involving choice, the ability of graduates to be part of the medical scientific community should be tested and validated

A relationship exists between the style of teaching, assessment and the type of learning, which the student adopts. Assessment of this outcome should therefore promote a deep approach to learning by the student. Tools such as Portfolios provide one example whereby this can be achieved. Special Study Modules can further enhance this aspect of the teaching and learning of basic, social and clinical science.

It is highly desirable for the chosen assessments(s) to be capable of detailed item analysis and subsequent measures of reliability.

What standard should be applied to the assessment(s)

It is essential in the assessment of medical undergraduates to separate the competent from the non-competent. The assessment of the nature of the student's knowledge of basic, social and clinical science has already being highlighted as central to competence. Therefore, any assessment of this outcome requires to have the clear ability to separate the competent from the non-competent.

Given the core nature of the material included in the assessment of this outcome, a high level of achievement should be required. The application of a mastery approach to performance may be possible in the assessment of

this outcome, the assessment consisting of questions, which candidates ought to be able to master in order to be considered fully competent. If this is felt not to be possible or appropriate, we need a tool that can be used to determine a point on a scale of scores that will be designated the "pass-mark" separating competent from non-competent.

Any system or tool, which is employed in the assessment of this outcome to designate a passing score, should be criterion referenced. That is, establishes the performance of the student in comparison to a standard set prior to the examination. Norm referencing, whereby the student's performance is compared to that of the whole group is inappropriate for the following reasons:

- The standard is not related to the content (in the case of this outcome "core") .The ability of the cohort of examinees may influence the standard
- Feedback given is only relative to their colleague's performance not to the "standard" which is required for competence
- The standard is not known in advance

There are a number of standard setting procedures available. The "Modified Angoff" is already in use in a number of Scottish medical schools. A full description of this, other approaches and a discussion of the issues surrounding standard setting is available in AMME Guide No 18. Standard setting in Student Assessment. M Friedman Ben David. Medical teacher 22(2): 120-130.

A common agreed minimum standard / benchmark in all Scottish medical Schools for the assessment of this outcome is desirable.

Assessing progression

Both students and faculty require to have on going feedback on their acquisition and maintenance of their skills under this outcome. This allows students to enhance their self-learning skills in identifying their ongoing strengths and weaknesses across the curriculum. Faculty requires to evaluate the effectiveness of their teaching. This can be achieved by the use of "progress testing". The concept of progress testing was developed simultaneously at the Universities of Limburg and Missouri. This has since been adopted at a number of other medical schools across the world. This form of assessment basically involves the students from all levels or years of the course periodically sitting an assessment of their medical knowledge. This is generally includes a sample from a very broad amount of material. This allows the assessment to identify an increase in individual students knowledge over time, based on the knowledge required to fulfil the learning objectives at the end of the course.

To date, the overall philosophy of a progress test has been to help promote appropriate and desirable learning styles and methods, principally by making it very difficult to study for the examination, encouraging the development of functional knowledge relevant to the final objectives of the course and beyond.

TOOLS OF ASSESSMENT "How should we assess"

The characteristics of good examination questions are:
- Validity – the course content is assessed in the right proportions and reflects the aims and outcomes and style of the course
- Appropriate level – the level of difficulty matches the level of the student.
- Discrimination – differentiates between good and poor students
- Reliability – confidence in the results the paper produces.
- Motivation – the paper should stimulate the students and be interesting.
- Clarity – easy to read and respond to.
- Efficiency – does not overwhelm the assessors or the candidates.

Written examination questions fall into two main categories. **Free response questions** include essays and short answer questions that require the student to *supply* the answer and **objective questions** where students *recognise* the answer.
Objective questions are structured questions where students complete the answers on an answer grid which can be optically marked.

The following are currently in use for the assessment of this outcome in Scottish Medical Schools:

- **Objective Type:**

    o MCQ
    o EMI

- **Free response Type:**

    o MEQ
    o CRQ
    o Essay
    o Work Book
    o Progress testing / very short answer questions
    o Portfolio's

Examples of free response questions can be found in Appendix 1, of objective questions in Appendix 2.
Examples of approaches such as Portfolio assessment in Edinburgh and Dundee are included in Appendix 3 and 4 respectively. A "work book" is included in Appendix 5 from St Andrew's.
Examples of very short answer questions in the context of a Progress test are include in Appendix 6.

Free response questions

The main issues associated with these are:
1. Preparation: relatively quick and easy (highly efficient).
2. Marking: more subjective and increased variance requires careful management techniques (double marking, moderation, well constructed mark scheme). Time consuming and intensive and cannot be marked by an OMR (not highly efficient).
3. Expression: the students are required to use their powers of expression to frame the answer. This increases the difficulty for the student, and also raises issues of marks for expression, spelling, length of answer.
4. Sampling: content cover is usually more limited. If choices of questions are offered different candidates may in fact answer different examination papers as a result. Individual questions can be structured to examine a topic in depth.
5. Challenge: assessment of sophisticated skills, such as cause and effect, structured sequences, application of understanding and transfer of knowledge are possible.
6. Motivation: generally more interesting for the candidates, but in addition they motivate students to organise their learning more thoroughly in preparation for the exam (favours thinkers, deep and strategic learners)
7. Time: Students have to plan their time more carefully. Staff have to plan their time carefully to complete the marking. Results take time to be made available.
8. Special needs: students with special needs (dyslexia, or visual impairment) are disadvantaged. Handwriting becomes an issue for student writing and staff reading, particularly as word-processing is now accepted as normal.
9. Analysis: pre-testing of questions and statistical analysis of results is less reliable. Therefore less helpful as an instrument.

Objective questions

The main issues associated with these are:
1. Preparation: Time consuming and subjective – therefore more care needed in selection and construction (not highly efficient to construct, but need only be written once).
2. Marking: speedy and objective (highly efficient).
3. Expression: not a requirement.
4. Sampling: excellent potential for broad coverage of aims and outcomes. Offering a choice is unnecessary and this increases reliability and fairness.
5. Challenge: the challenge comes in reading and responding to questions as quickly as possible. Questions offer cues and favour recall of knowledge.
6. Motivation: generally less interesting to complete and students tend to cram in revision (favours use of short term memory and superficial learners).
7. Time: time management is easier for the candidates. Time needed by academic staff for marking is minimal with an OMR, and results can be returned very quickly.
8. Special needs: disadvantages students with reading impairment.
9. Analysis: questions can be pre-tested and post-hoc analysis can be used to aid course evaluation and cohort progress. Diagnostic assessment can be made for individual students.

Negative marking

There is no educational or psychometric justification for negative marking. Negative marking is almost unknown outside UK medical schools, and public examination boards do not use it. It has been shown that negative marking measures attributes unrelated to the knowledge being tested, such as the willingness to gamble when not certain of an answer. For example, men generally outscore women in such tests, all other things being equal.

Candidates who make a guess are statistically likely to make a wrong guess. That is the function of the distractors. What is the case for distorting the accuracy of the score for the correct answers? Negative marking cannot be taken into account when the results are analysed. It confuses the calculation of discrimination, reliability and validity. This detracts from the aim to build up a bank of good quality questions.

With negative marking a candidate could theoretically receive a minus mark which reflects the 'common sense' view that it lacks foundation.

Recommendations for Assessment of Outcomes:

The performance of each assessment will vary according to a number of factors including:

        Content

        Context

        Staff development

        Resources

        Effort

However the following table is a summary of recommended assessment instruments and the performance that can reasonably be expected:

Assessment Type	Validity	Reliability	Feasibility
MCQ	++	++	++
EMI	++	++	++
MEQ	++	+*	++
CRQ	++	+*	++
ESSAY	++	+*	+
WORK BOOK		+*	+
PROGRESS TEST	++	++*	+**
PORTFOLIOS	++	?	+

*= Reliability of these assessment types is particularly susceptible to variation in marking, and the individual markers response to the more "open" responses able to be provided by the student. However these can be overcome with such procedures as double marking, high quality structured response sheet used by the markers.

**= Progress Test have been in use in some medical schools for many years and shown to be very successful, at least one Scottish school is currently evaluating the potential implementation of a Progress Test.

Implementation: "How do we do it?"

The assessment of this outcome should follow the curriculum, which is delivered as an integrated manner in all Scottish Medical Schools. Local curriculum, resources and staffing implications may however require that the assessment is divided. However the following points should be noted:

- As the material is deemed essential / core, scope for compensation between elements should be strictly limited.

- The assessments should include a large number of questions to ensure a representative sample of core knowledge, and to demonstrate competence in this.

Students should have the opportunity to be assessed formatively under this outcome, and the use of modern technologies such as Computer Aided Assessment allows a continuous opportunity for a student to monitor their acquisition of knowledge in an outcome such as this, and so strengthen their self directed learning.

The outcome should be subject to regular summative assessment, at all stages of the curriculum as detailed elsewhere in this report.

This outcome is most appropriately assessed in an integrated manner, therefore the design and administration of the assessment(s) should be carried out under the supervision or by a "central" examinations office. However local curricula details and resources will determine the chosen method to implement the recommendations for assessment of this outcome.

Staff development may be required depending on the question format(s) chosen. Objective question types such as MCQ, EMI in particular require to be written carefully and considering various assessment principles. Although many schools currently use these assessment techniques and therefore staff are familiar with them.

Adoption of a Progress test has recently being carried out by one of the schools. This has required 1WTE member of faculty, 5 sessions of time for a review committee for submitted questions and a 0.5 WTE administrative support. It is currently anticipated that the test will require 0.1 WTE member of faculty, and similar resources for the review committee and administrative support on an annual basis to continue with the test implementation.

Feedback

The feedback of details regarding the nature of an individual students core knowledge acquisition under this outcome is essential. As previously stated this will allow students to monitor their progress and maintenance of already acquired knowledge, enhancing the student self-learning. This feedback should be detailed and be broken down to reflect the individual domains of knowledge that make up the integrated curriculum in the individual medical schools.

Feedback of assessment under this outcome should ideally be given following each staged assessment. Assessment methods such as a Progress Test are by their design ideal for providing detailed feedback of knowledge, maintenance thereof, and cumulative information as the undergraduate progresses through the course.

Assessment tools, which encourage students to think, discuss problems amongst peers and with tutors are able to provide continuous feedback and as such are an excellent system to enable students to monitor their learning. An example of such a tool is given in Appendix 5.

Other issues
Further consideration should be given to the concept of a national 'Progress Test', the results of which would be for consumption only within each school. However, it would facilitate over time the creation of a national core and benchmark.

- Such a test would allow important principles such as the possible decay of knowledge, integration of basic and clinical sciences and feedback to the addressed.

The assessment strategy of Basic, Social and Clinical Science and Underlying Principles highlights that the creation of the following common, shared resources would be of benefit to the Scottish medical schools.

Creation of a central bank of objective test items, stored with information on their item analysis/reliability when used. The use of questions would create a route to illustrate a common core if desirable. The 'bank' would act as a shared resource, potentially improving quality of each schools assessment, sharing expertise and creating cost savings.

- Many of the Scottish schools have developed innovative formative and summative assessment in this outcome area; the sharing of information in assessment could potentially benefit both Faculties and students.

- Examples of these innovative approaches such as Portfolio assessment in Edinburgh and Dundee are included in Appendix 3 and 4 respectively. A "work book" is included in Appendix 5 from St Andrew's.

Summary

It is essential for any curriculum to have a reliable and valid instrument(s) to assess this outcome, given the major contribution it plays in overall competence.

There are a number of recommendations from external bodies such as the GMC which require to be considered regarding the implementation of the assessment of this outcome.

There is a need to for an assessment to provide a common understanding among faculty and students with respect to the core elements of the curriculum for this outcome.

The assessment should become an evolving benchmark for quality control, and a agreed minimum standard /benchmark across all Scottish Medical Schools is desirable.

The assessment should seek to validate the core knowledge and principles of basic, social and clinical science, which are essential for medical practice as a PRHO and as a subsequent foundation for future professional development.

The assessment of this outcome should ensure that graduates are able to achieve integration of basic, social and clinical science in a clinical context and the process of medical care.

Through participation in Special Study Modules and other curricular elements involving choice, the ability of graduates to be part of the medical scientific community should be tested and validated

It is highly desirable for the chosen assessments(s) to be capable of detailed item analysis and subsequent measures of reliability.

It is essential that any assessments(s) for this outcome are able reliably to separate competent form non-competent students.

Given the core nature of the material under this outcome a high level of achievement should be required.

Any system or tool, which is employed in the assessment of this outcome to designate a passing score / set standards, should be criterion referenced.

The assessment of this outcome should include both formative and summative methods, and continuous and discrete items of assessment. Local applicability will determine which types are most appropriate at different points of the curriculum.

Any assessment(s) should provide detailed feedback to the undergraduate, with appropriate detailed breakdown of these achievements. It is desirable to provide students and faculty with the opportunity to monitor their acquisition and maintenance of their skills under this outcome. Assessment instruments such as a Progress Test have been shown to be able to fulfill this role in a number of curriculum styles.

Assessment Instruments considered appropriate to assess or contribute to the assessment of this outcome include objective types, such as MCQ and EMI; and free response types, such as MEQ, CRQ, very short answer questions, essays, work books, progress testing, and portfolios.

Further consideration should be given to the concept of a national 'Progress Test.

Sharing of assessment resources, such as a central bank of objective test items, stored with information on their item analysis/reliability, would be of benefit to the Scottish medical schools.

REFERENCES

Hutchison T P. (1991) Ability, Partial Information, Guessing: Statistical Modelling Applied to Multiple-Choice Tests. Adelaide: Rumsby Scientific Publishing.
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Examples of questions were drawn from:

Torrance (1997): Higher Grade Biology Hodder and Stoughton

Buchanan and Melrose (1994) Assessment Test for Higher Grade Chemistry:

Brown,G. Bull, J. Pendlebury, M (1997) *Assessing Student Learning in Higher Education* Routledge London

APPENDIX 1

Example of Constructed response (CRQ) / free text response question (with answers).

Question

Hermione Small is 67 years old. She has recently noted colicky lower abdominal pain associated with intermittent constipation and diarrhoea. Her mother had a colectomy, and one of her sisters has recently undergone an operation to remove part of her large bowel.

1 What FOUR features are important in the history?

a) Age	(1 mark)	
b) Abdominal pain	(1 mark)	4 marks
c) Change of bowel habit	(1 mark)	
d) Possible family history of colorectal cancer	(1 mark)	

2 What THREE pathological processes could give rise to these symptoms?

a) Colorectal cancer	(1/2 mark)	1 _ marks
b) Diverticulitis	(1/2 mark)	
c) IBS	(1/2 mark)	

3 What THREE further questions could you ask to clarify the cause of the   symptoms?

a) Rectal bleeding/mucus	(1/2 mark)	
b) Weight loss	(1/2 mark)	1 _ marks
c) Reason for operations in relatives	(1/2 mark)	

4. What TWO parts of the clinical examination are most relevant to the symptoms?

a) Abdominal examination	(1/2 mark)	1 mark
b) Rectal examination	(1/2 mark)	

5. What TWO investigations are mandatory?

a)		
b) Full blood count	(1 mark)	
c) Barium enema and sigmoidoscopy	(1 mark)	2 marks
OR		
Colonoscopy	(1 mark)	

Total 10 marks

APPENDIX 2

EXAMPLES OF OBJECTIVE QUESTIONS

The structure of objective questions are limited by the imagination of the author and restricted to the number of distractors offered by the optical mark reader. The classification of question types is arbitrary and the following examples are not definitive or exhaustive.

- true-false
  Tests recall of knowledge and favours students with a superficial knowledge.
- interpretation of data
  Tests the ability to read and use scientific or clinical information. This is a higher order than simple questions that require recall of knowledge. It enables an objective test of a fundamental professional skill.
- application of knowledge
  These questions require more than pure recall and go someway towards testing understanding. They help to differentiate between students who have a superficial knowledge and students who have a deeper grasp of their subject.
- matching pairs
  These questions require some thinking and therefore test, to some extent, understanding rather than superficial knowledge.
- correct sequence
  These test deeper levels of knowledge than mere factual recall, and enable the students to be tested about processes, actions and outcomes, and relationships between variables in way that true-false questions fail to do.
- multiple choice
  The usual form of having stem (question) and distractors (choices) is more sophisticated than true-false as there is an opportunity to have one, more or all of the choices correct.
- sentence completion
  A useful way of testing vocabulary and circumstantial knowledge
- assertion – reason
  These test understanding and application of knowledge and require the student to understand the context of the question.

The various types are illustrated by the following questions. (These have been devised for purposes of illustration only.) The questions are largely biomedical, but questions from other disciplines (ethics, public health, psycho-social aspects, behavioural science) can also be included. A clinical case is given as an example of how the questions might be arranged in an integrated paper for an End of Term Assessment.

The opening rubric to candidates would be: *"read the following case and answer the questions numbered 1 to 20. Indicate your answers on the separate answer grid".*

A 17 year old female student in a hall of residence develops a headache. This lasts for 24 hours and becomes progressively more severe. She vomits several times. The warden calls the GP to see her. The GP finds that the student is drowsy and has a temperature of 39 degrees Celsius. He concludes that she has some inflammatory condition. In addition he finds she has stiffness of the neck and intolerance of the light (photophobia), both of which indicate irritation of the meninges. She is clearly seriously ill and he summons an ambulance to rush her to hospital, so that samples can be taken for microbiological investigation and adequate management instituted.
Over the next few days another student in the same hall of residence develops similar clinical features.

TRUE-FALSE
For the questions labelled 1 – 5 indicate if they are:
A <u>TRUE</u>   or   B <u>FALSE</u>   in relation to the case:

1. the GP would take her to hospital immediately.
2. the vomiting is caused by an ionic imbalance in the stomach wall
3. a temperature of 39°C is not unusual in healthy women
4. the other students are not at serious risk
5. infection by Neisseria is a high probability
   5 marks

INTERPRETATION OF DATA

Questions 6 and 7 refer to the information below

Investigation	1	2	3
White cells	predominantly polymorphs	predominantly lymphocytes	predominantly lymphocytes
white cell count	500 - 1000	<500	<500
CSF/blood glucose	<40%	60%	<40
CSF protein	0.5-3.0g/l	1.5-1.0g/l	1.0-6.0g/l

6. Which of the results of the investigations suggest a bacterial form of meningitis?

a) 1 only

b) 1 and 3

c) 3 only

d) 2 only

1 mark

7. Which set of results would you think reflects the symptoms?

a) 1 only

b) 2 only

c) 3 only

d) none

1 mark

APPLICATION OF KNOWLEDGE

In the management of meningitis you would consider:

   a) intravenous benzylpenicillin

   b) sulphonamides

   c) rifampicin

   d) minocycline

8. which would you consider for an adult, but avoid in a child?

1 mark

9. which would be used in an emergency?

1 mark

MATCHING PAIRS

Match the list in X with the descriptions in list Y

List X (question number)	List Y (answer)
10. personal contacts	a. stains as Gram positive
11. Listeria	b. should be offered rifampicin
12. arthritis	c. may require intensive care
	d. is a late complication of meningococcal disease
	e. is indicated by Kernig's sign

3 marks

CORRECT SEQUENCE

Prior to mucus leaving a goblet cell and playing its role in the trachea, the following events occur:

1. fusion of vesicle with plasma membrane
2. addition of carbohydrate component to protein
3. secretion of processed glycoprotein by cell
4. separation of vesicle from Golgi apparatus

13. The sequence in which these events occur is:
    a) 4,2,3,1
    b) 2,4,1,3
    c) 4,2,1,3
    d) 2,4,3,1

1 mark

MULTIPLE CHOICE

14. Adaptive immune systems have features in common. Which one of the following is NOT a common feature
    a. antigen is presented by specialised cells to lymphocytes
    b. lymphocytes proliferate to form multiple mutagens
    c. the response is remembered (memory)
    d. the magnitude and duration of the immune response is controlled.

1mark

(A useful variant of this is to have a stem which asks for the BEST answer from the four / five distractors)

SENTENCE COMPLETION

15. Read the following sentence and complete the blank from the list of words a) – e)

In pyogenic infections 15) …………………….. tend to become more prominent as the inflammatory process becomes chronic.
    a) lymphocytes
    b) erythrocytes
    c) leucocytes
    d) neutrophils
   e) pyrophils

1 mark

ASSERTION REASON

The questions 16 - 20 are composed of two statements, 1 and 2, either of which may be independently true or false; in addition, statement 2 (reason) may or may not follow from statement 1 (assertion). Indicate your decision by scoring the appropriate letter:

	Statement 1	Statement 2
A	true	true
B	true	false
C	false	true
D	false	false
E	both are true but statement 2 does not explain statement 1	

	Statement 1		Statement 2
16	cortical bone is better evaluated by radiographs	because	cortical bone contains virtually no mobile hydrogen and gives a very low MRI signal intensity
17	connective tissue cells include transitory lymphocytes and neutrophils	because	the numbers are influenced by cell adhesion molecules and cytokines that prevent monocytes entering the tissue
18	by cytotoxic T-cells are able to induce the target cell to undergo programmed cell death (apoptosis)	because	they bind to the target cell and release perforins that polymerises the plasma membrane of the target cell
19	the 'velcro principle' describes the interaction of receptors and ligands	because	the protein 'hooks' grow from the receptor and bind it to the respective ligand
20	non-steroidal anti- inflammatory drugs promote the synthesis of prostaglandins	because	by promoting the release of free arachidonic acid from phospholipids

Examples of questions based on a diagram:

Question 21 and 22 refer to the following bar graph. It shows the rate of blood flow in four parts of the body when the body is different states of activity.

rate of blood flow in body tissue
(cm^2/min)

(values approximated for ease of illustration)
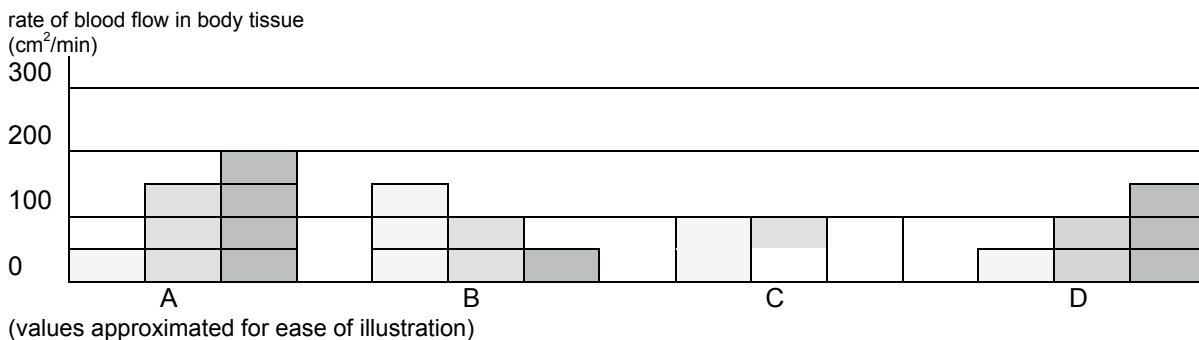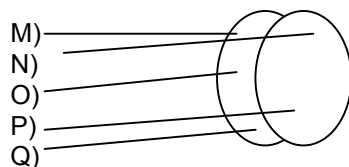
21 Which group of bars represents the small intestine?   1 mark
22 Which group of bars represents the brain?   1 mark

Questions 23 and 24 refer to the labelled diagram of the heart.

23. label M indicates the position of the
 a) right atrium
 b) left anterior descending artery
 c) interventricular septum
 d) aorta

                                                                          1 mark

24. the area labelled P has a normal pressure of
 a) 25 / 15 mmHg
 b) 25 / 4-12 mmHg
 c) 120 / 80 mmHg
 d) 1 – 6 mmHg

                                                                          1 mark

                                                                   Total marks 24

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Appendix 3

Kindly provided by Dr A Cumming and Mr P Evans.

THE EDINBURGH STUDENT PORTFOLIO

Background
Several important 'threads' run through most forms of clinical practice, in most settings, irrespective of the clinical speciality. In the past, medical school curricula often failed to give due weight to topics which did not fit neatly into individual specialities. An important feature of Edinburgh's new curriculum is the emphasis given to these integrating threads, in the form of Vertical Themes.

Purpose
The purpose of the Portfolio is to enable students to address some important topics (Box 1) from within the curriculum's integrating Vertical Themes by drawing simultaneously on several cases (or projects) from several different specialities.

Medical students have a wide range of interesting and significant learning experiences. Recording them in a personal portfolio, in a way which facilitates reflection on the Vertical Themes, improves understanding of the Themes and should also increase insight into the development of personal frameworks of knowledge, skills, attitudes and behaviours.

The Portfolio forms the basis of the oral examination in the Final Professional Examination, when the examiners will assess understanding of the Portfolio Vertical Themes (PVTs) (Box 1 below) in a discussion in which students are encouraged to refer to individual cases/projects and, preferably, to combinations of cases/projects from the Portfolio.

PORTFOLIO VERTICAL THEMES   (PVTs)

Disability*
Pain
Nutrition
Life cycle**
Personal development
Communication
Evidence-based practice
Ethics & legal responsibilities
Psychological aspects of clinical practice
Pharmacology and therapeutics
Public health***

---

*   Includes Rehabilitation, Impairment, Disability and Handicap

**   Students need not confine themselves to the human life cycle but, where appropriate, could also think in terms of life cycles ranging from bacteria to communities.

*** This encompasses both community-based aspects of Public Health and also issues of Health Promotion and Disease Prevention as they relate to the individual patient.

Box 1 Those aspects of the Vertical Themes addressed with the aid of the Portfolio

Building a Portfolio
As students move through the course individual attachments and modules require them to complete case studies or project reports. These, the elements of the portfolio, are all important in their own right, as records of important learning experiences and as opportunities for diagnostic feedback and guidance from teachers. The Portfolio as a whole, however, should be greater than the sum of its parts.

In allocating cases teachers emphasise:
  - clinical conditions which may be seen frequently during the PRHO year,
  - instances where PVT issues have a particular bearing on the care of the patient.

Year 1 Year 1 includes two Portfolio items – Option 1 (the Problem Based Learning Project) and the 'Talking with Families' Project. In order to help the transition to medical school, early Portfolio elements are prescribed as a way of helping the structure of early Portfolio work. Each project attracts formative feedback.

Year 2 In Year 2 there are four elements to the Portfolio. These are the two Options projects and two cases written up from the Clinical Case Conferences of the Biology of Disease course.

Year 3 In Year 3 there are four elements to the Portfolio - one Portfolio case each from the Cardiovascular, Respiratory, Gastrointestinal and Locomotor modules.

Year 4 In Year 4 there are 6 elements of the Portfolio. These are four cases, the Special Study Module and an Overview. The cases are patients seen in General Practice, Psychiatry, Obstetrics & Gynaecology, and Renal Medicine or Haematology. The Overview is focussed on a PVT chosen from among a set of PVTs announced at the start of Term 3. To write the Overview, students draw extensively on the material in their Portfolio, especially on the patients and families with whom they have actually worked in Years 3 and 4. The Overview is marked and returned with feedback. The mark is carried forward into the Final Professional Examination.

Year 5 During Final Year a further five elements complete the Portfolio. These comprise three more cases, the report from the Elective Project and another Overview. The cases are patients seen in Child Life & Health, Geriatric Medicine, and 'Acute Specialities'. In the Overview students bring together the content of the Portfolio in a new unifying PVT, chosen from amongst a set announced during Term 1. It is marked and returned with feedback. The mark is carried forward into the Final Professional Examination.

Assessment of the Elements of the Portfolio
At or near the end of each module, course or attachment, Portfolio work is presented for assessment and is given a mark in accordance with the Medical Faculty's Common Marking Scheme.
The contribution of Portfolio material to In-Course Assessment varies according to individual courses, assessment patterns and weightings. Nevertheless, at the end of each year, students must have obtained at least a 'Pass' in each of the Portfolio items to progress to the next stage of the course.
Portfolio material is given a mark by teachers against an explicit set of criteria. When each piece of your work is returned it is accompanied by feedback about the strengths and weaknesses. Marks and feedback are sent to Director of Studies and copies are kept by Faculty Office.

At Finals
Students bring the entire Portfolio to the Finals viva. Examiners are given a copy of the two Overviews and the marks awarded for them. The Portfolio forms the basis of a 45-minute oral examination. This assessment completes the overall Portfolio mark.
The Portfolio examiners do not seek to assess fundamental factual knowledge. It may happen, however, that the Portfolio examiners find reason to believe that a candidate has important gaps in factual knowledge. In such a case, the examiners have the option of referring the candidate for a further (but knowledge-oriented) 45-minute oral examination, to be held during the second week of the Final Professional Examinations.

WRITING THE CASE REPORT
Guidelines are given below on the following aspects
- **Contents of the report**
- **Layout of the report**
- **Submission rules**

Contents of the Report
Students clerk the patient as they are when they see them, and document their current symptoms, signs and concerns. They imagine they are a junior doctor clerking a patient newly transferred into the ward, taking due account of all that has led to their admission to hospital and all that has happened between admission and transfer but with the responsibility for taking their management forward.

A Case Report should comprise:
Clinical History
Including, as appropriate, a summary of the results of the most relevant investigations and the patient's responses to therapeutic interventions already made. Also to include the patient's ideas, concerns and expectations.
Clinical Examination
As conducted by the student
Diagnostic Summary
A list of the patient's problems. Each problem with its corresponding list of contributing causes (physical, mental and social) supported, where appropriate, by the results of relevant investigations.
Management Plan
Detailing the further investigations and interventions that should be conducted, the explanation and advice that should be given to the patient, and the medication (including doses).
Discussion
Should address aspects of the **Basic Sciences** and of a range of the **Portfolio Vertical Themes** (see Box 1 above) as they relate to the 'case' being reported.

Layout Of Report
- Student's matriculation number, date and name of module all to appear at the top of every   page.
- Printed in Times, not less than 12 point or Arial, not less than 11 point.
- Margins at least 2 cm.
- 1.5 line spacing
- Page number displayed on every page
- No more than 4 pages for Clinical History, Clinical Examination, Diagnostic Summary, and Management Plan combined.
- No more than 4 pages for the Discussion.
- Ensure that the patient's identity is concealed throughout.
- The use of standard clinical abbreviations is permitted in the Clinical History and the Clinical Examination.
- A telegraphic style (using lists) is often preferable to formal prose (using sentences).
- Where clarity will be enhanced, the use of diagrams is encouraged, *but will be included in the page count.*
- Layout violations will be penalised.

Submission Rules
One paper copy and one electronic copy of each Portfolio entry is submitted. The paper copy is annotated and returned along with the mark sheet. All the electronic copies are made available to the external examiners in Year 4 for review.
Electronic Portfolio
The management of the portfolio is run online. An electronic version of each of the items is held in a portfolio workspace and any submitted item can be viewed and/or printed at any time. Access to the Electronic Portfolio is via the Electronic Curriculum (EEMeC) at http://www.eemec.med.ed.ac.uk or direct at http://www.portfolio.mvm.ed.ac.uk .

Case Reports: Assessment and Feedback
Case Reports are marked by module tutors in accordance with criteria outlined in the assessment sheet, as shown below.

STUDENT ID NUMBER_____

MODULE_____

	FAILURE TO ATTAIN CRITERIA	FAIL	MARGINAL FAIL	PASS	GOOD	VERY GOOD	EXCEL-LENT	EXCELLENT ATTAINMENT OF CRITERIA
Clinical history	*Significant gaps / errors, poor structure.* *Omits relevant exploration of patient's ideas, concerns & expectations.* *Omits relevant 3rd party information.* Does not identify sources of info.	0 - 9	10 or 11	12 or 13	14 or 15	16 or 17	18 - 20	Complete, concise, accurate, logical structure. Explores patient's ideas, concerns & expectations in some detail, where appropriate. Info. from patient, relatives, carers where appropriate. Identifies sources of information.
Clinical examination	*Significant gaps.* Several errors in key clinical signs. Does not consider PR, PV exams.	0 - 9	10 or 11	12 or 13	14 or 15	16 or 17	18 - 20	Thorough in all 'systems', including BP & urinalysis. All relevant clinical signs elicited & clearly recorded. Gives indications for PR or PV examination.
Diagnostic summary	*Serious gaps in problem list.* Significant errors / omissions in differential diagnoses.	0 – 7	8	9 or 10	11	12 or 13	14 or 15	Identifies all active and inactive problems. Logical differential diagnoses covering all relevant physical, psychological and social factors.
Management plan	Several problems not addressed. Omits key investigations. Dangerous dosage errors. Omits interdisciplinary management. Does not address patient's agenda. Advice and explanation omitted, inappropriate or seriously wrong.	0 - 7	8	9 or 10	11	12 or 13	14 or 15	Logical, appropriate and thorough plan for all problems. Identifies all important investigations required and the action to be taken on the results. Good proposals for interdisciplinary management. Addresses patient's agenda Details advice & explanation to be given to patient.
Discussion	*With reference to **Basic Sciences** and a range of relevant **Portfolio Vertical Themes** (see attached list)* Discussion very limited, superficial, or irrelevant. No evidence of further reading.	0 - 9	10 or 11	12 or 13	14 or 15	16 or 17	18 - 20	*With reference to **Basic Sciences** and a range of relevant **Portfolio Vertical Themes** (see attached list) ....* Demonstrates detailed relevant knowledge integrated from many different sources. Thorough grasp of relevant concepts. Shows evidence of well-chosen further reading, including primary sources where appropriate.
General presentation	Disorganised layout. Errors in use of medical terminology Figures & tables unclear, poorly labelled, unhelpful. The work of others not acknowledged. Fails to use appropriate reference style.	0 - 4	5	6	7	8	9 or 10	Well organised, reader-friendly. Correct use of medical terminology. Effective use of clear, properly labelled figures and tables. The work of others appropriately acknowledged & cited.

COMMENTS – TO BE WRITTEN OVER THE PAGE

OVERALL MARK: _____ SIGNED: _____ DATE: _____

TUTOR'S COMMENTS ON CASE REPORT - FEEDBACK FOR THE STUDENT

The Overview Essays

One of the important functions of the Portfolio is to help students develop understanding of some of those aspects of medical practice that are multi-faceted and therefore difficult to learn from individual cases. These have been listed as the Portfolio Vertical Themes. It is expected that students will draw on their experiences of several cases to give them a fuller understanding of the themes. Different cases illustrate how the healthcare team addresses various aspects of the themes or how the experiences of the patient may be influenced by excellent (or absent) skills or knowledge within the theme. For example within your case studies you may have discovered that pharmacology and therapeutics is more than just knowing what drug to prescribe: it may be very difficult to establish concordance between the doctor and the patient to ensure drugs are taken as prescribed; it is easy to make mistakes in prescribing and giving medicines; and drug interactions may mimic other disease.

Overview Essays: Assessment And Feedback
The overview essays are marked by tutors in accordance with criteria outlined in the assessment sheet (q.v.). The marks for the overview essays in Years 4 and 5 are carried forward to the Finals viva.

STUDENT I.D NUMBER

_____

TITLE OF ESSAY

_____

PORTFOLIO OVERVIEW ESSAY
ASSESSMENT AND FEEDBACK

	FAILURE TO ATTAIN CRITERIA	FAIL	MARGINAL FAIL	PASS	GOOD	VERY GOOD	EXCELLENT	EXCELLENT ATTAINMENT OF CRITERIA
Analysis of the portfolio entries with respect to PVT	Fails to refer appropriately to portfolio elements. Restricted to an essay on the PVT No analysis of cases to demonstrate aspects of the PVT Lacking logical and systematic approach	0 - 19	20 - 23	24 - 27	28 - 31	32 - 35	36 - 40	Excellent use of portfolio elements Evidence of analytical and critical thinking with respect to 'cases' Logical development of information
Conclusion	No conclusion drawn from the overview	0 - 4	5	6	7	8	9 / 10	Conclusion expressed and well supported by evidence
Reflective practice	No evidence of reflection with respect to one's future practice							Clearly considers how past experience will influence one's future practice
Knowledge Concepts Understanding	Very limited, superficial, irrelevant knowledge of 'cases' and PVT Poor synthesis Serious misconceptions Concepts poorly explained	0 - 9	10 / 11	12 / 13	14 / 15	16 / 17	18 - 20	Detailed relevant knowledge, Integrated from many different sources Thorough grasp of relevant concepts with appropriate examples
Sources	Poor choice of sources The work of others not acknowledged Does not use an appropriate reference style	0 - 4	5	6	7	8	9 / 10	Excellent choice of sources Acknowledgement of others' work Appropriate reference style used
General presentation	Disorganised layout Many errors in grammar and spelling Poor sentence construction Poor use of figures & tables: not clear, poorly labelled, of doubtful relevance	0 - 4	5	6	7	8	9 / 10	Well organised Good grammar & spelling Fluent style Effective use of clear, properly labelled figures and tables
Originality	No evidence of original thought	0 - 4	5	6	7	8	9 / 10	Clear evidence of original thought throughout

COMMENTS:

OVERALL MARK: _____SIGNED : _____   DATE: _____

The MBChB Electronic Portfolio

What is it?
The MBChB Electronic Portfolio (MEP) is a web-based document management system facilitating the submission and marking of the 21 portfolio case reports and items that are prepared by every student on the Edinburgh MBChB course during the 5 years of their study. It is part of the EEMeC virtual learning environment and is accessed via EEMeC using an EEMeC login identity.

What can it do?
It holds a copy of every completed portfolio item for every student, allowing them to access at any time to view or print a fresh copy of the work as well as view deadlines for future work, upload new reports and see marks.
It also lets nominated staff view the portfolios and edit certain aspects such as submitting marks. It allows an archived copy to always be available for all those that need access to the documents for teaching/learning, examination or administrative reasons for the duration of a student's participation in the MBChB programme. In particular it allows for fresh copies of the documents to be made available for the viva examination at the end of the course.
It also allows audit e.g. number of late submissions; statistical analysis of marks awarded with respect to items or markers.

How secure is it?
Each student is able to see only his/her own portfolio. Once they have uploaded a document for their portfolio, they cannot upload a replacement file unless the original is cleared by an authorised portfolio administrator.
Nominated staff have access to the portfolios. These are course tutors, representatives of the Medical Teaching Organisation and Faculty Office, the examination board and the year organisers and secretaries. Report and overview markers are able to mark the reports online through the MEP and nominated 'portfolio administrators' will be able to clear a failed item allowing a student to submit a fresh attempt.

What can a student do in the Electronic Portfolio site?
They can do the following:
- View information on any of the 21 portfolio entries that they have previously uploaded. This includes the time/date uploaded, the grade and breakdown of marks, markers' comments and the document itself. The documents are saved in Adobe Acrobat format (available free online at www.adobe.com)
- Upload a document for any items not currently in the portfolio. This needs to be in Microsoft Word format (or compatible such as rich text format - RTF) and set using no non-system fonts and with all images embedded in the document (rather than linked).

What can a member of staff do in the Electronic Portfolio site?
Depending on the rights associated with their account they can do some or all of the following:
- They are given different 'identities' (such as tutor, marker etc) to choose from when logging in. Each will give different tools for use with the portfolio. They may re-login with a different identity to perform different tasks.
- Once they have logged in they can select the student's portfolio to view by entering their matriculation number.
- See all 21 entries for a given student's portfolio.
- Clear a previous submission, allowing a new document to be uploaded by a student. This would be when a first submission has failed and a new document is to be resubmitted for marking.
- Mark a case report. The appropriate marking schema is used as a context for the markers to submit marks for their students' work and also includes a 'comments' facility to allow comments on a report to be entered for the student's benefit.
- View statistical and user information on the MEP

APPENDIX 4

Portfolio's In Dundee.

Material kindly provided by Dr J Kerr.

The Portfolio Examination System in Dundee

Introduction

Portfolio based learning is now used in many higher educational and training institutions. Portfolios are a collection of evidence which "demonstrates the continuing acquistion of knowledge skills attitudes, understanding and achievements….. reflecting the current stages of development and activity of the individual." (Brown 1995).

Over the past few years portfolios have become increasingly used in the medical context first in continuing professional development and recently in undergraduate medical education.
The three main purposes for which medical schools use portfolios are as
  • an assessment tool,
  • a record of achievement held by the student for their own use and for
  • evidence of life long learning.

The interest in portfolios for assessment results from an increasing emphasis on accountability following the recent changes in health care delivery and the abuses of professionalism demonstrated by the Shipman case, Bristol inquiry and Redfern report on retention of organs. The introduction of revalidation in relation to Fitness for Practice (GMC) in which a doctor will be required to provide evidence that the competence which secured initial registration has been maintained has also identified the potential of using a portfolio approach.

The advantages of using a portfolio for assessment at undergraduate level is that it reflects the reality of students' clinical experience and as such is an authentic sampling representative of their work. Portfolio assessment also enables the progress of students to be assessed over time. In addition portfolios enables outcomes which have traditionally been difficult to examine to be assessed. Portfolios also enables both formative and summative assessment processes to be brought together.

Background
The University of Dundee have adopted an outcome based curriculum in which learning is based on 12 outcomes or goals which provide a foundation for a competent and reflective practitioner for the pre-registration house officer year.
The outcomes have been grouped into three constructs which relate to what a doctor is able to do (outcomes 1-7) how a doctor approaches their practice (outcomes 8-10) and the doctor as a professional (outcomes 11-12). The curriculum is supported throughout its three phases by themes which have been identified as of particular relevance throughout the five year programme. These include topics such as anatomy, health promotion, clinical skills and rehabilitation.
The last two years (phase3) of the five year programme focuses on the students' development of clinical practice through 104 core clinical problems. Year 4 focuses on developing the students breadth of experience through 10 four week attachments and year 5 focuses on developing a topic in depth as SSMs and gives student opportunities to prepare for the PRHO year. Throughout this two year period students are required to build their portfolio based on their clinical experience. This includes a series of requested timed written submissions. A component of the portfolio is a Record of Achievement which focuses on the development of outcomes in, practical procedures, investigations, management of patients and legal responsibilities.

The Phase 3 Assessment Process
The assessment process for year 4 and 5 are linked to reflect the development of students clinical experience in relation to the twelve curriculum outcomes.

Year 4 examines the students core knowledge skills and attitudes in relation to the 12 outcomes. The assessment process includes
  • Completion of the year 4 portfolio requirements which consists of
    10 written patient presentations and completion of 75% of practical
    procedures in the Record of Achievement
  • OSCE examination
  • CRQ Constructed response Questions
  • EMI Extended Matching Items

Students must successfully complete this core assessment before presenting themselves for the year 5 assessment.
The assessment process at the end of Year 5 is part 2 of the final assessment and focuses on the submission of a completed portfolio. Most of the material is submitted for marking during the academic year.

A completed portfolio consists of
- An index of the required material
- Twelve summary outcome sheets (one sheet of A4 summarising the experience and personal progress relevant to that particular outcome and the supporting evidence to be found within the portfolio)
- Ten patient presentations from year 4 which links their experience on their block attachment with an analysis of the diagnosis and management of the patient to the curriculum outcomes
- Case discussions which link a patient summary to an exploration of one of the theme areas
- Assignment SSM from year 4 (the student develops a research project)
- Clinical ,theme and general practice SSM reports and assessment forms
- PRHO learning plans and assessment forms
- A report of the student's elective and their assessment
- Other material the student feels demonstrates their progress in relation to the curriculum outcomes
  The year 5 assessment process is a two part process

1 Portfolio Review and Assessment

All students participate in a portfolio interview which focuses on discussions of the students portfolio material exploring three aspects of their submitted evidence:
- their strengths in relation to the curriculum outcomes ,
- outcome areas which the students feel require further development
- and discussion about any clarification examiners required

Each student is examined by two examiners over a 40 minute period with each examiner having read the portfolio material prior to the interview. Examiners are also given discussion time for each student's portfolio as part of the assessment process. Examiners are required to independently grade the student in relation to each outcome prior to the interview and again following the interview. They are then required to reach a consensus grade in relation to the students performance for each outcome. A Portfolio Assessment sheet (PAS) is completed by each examiner for each student. These consensus grades are then discussed at the examiners meeting. Criteria in relation to grades have been developed in relation to the students final outcome profile and whether they will be exempted from the final exam or recommended for distinction.

2 Final assessment

Student who perform to a satisfactory level in the portfolio review and assessment are exempt from the final examination. For students who are non exempt they are required to undertake further work in the outcome areas and participate in both an OSCE examination which is based on common problems a PRHO is required to face and a further assessment of their portfolio with its additional evidence by two examiners.
A separate assessment exercise has been developed for distinction students.

Jean Ker
May 2001

APPENDIX 5

Assessing Medical Evidence Workbook.

Cellular and Molecular Medicine Workbooks

University of St Andrews.

Kindly provided by Professor M Steel

APPENDIX 6 Example of Progress test Questions; University of Dundee

PROGRESS TEST : QUESTION PAPER

TEST DATE : April 2001

004 Candidate name _____

Year of study

PROGRESS TEST : MARKING TEMPLATE

TEST DATE : April 2001

Form 004

#	Question Text	CorAns	004 #	Orig	Question Code	1st Answer Text	1st Alt Answer	2nd Alt Answer	3rd Alt Answer	4th Alt Answer
1	In which congenital heart lesion is fixed splitting of the second heart sound the main abnormal finding on auscultation?		1	115	ME1084004	Atrial septal defect	ASD			
2	What is the most common cause of chronic obstructive pulmonary disease?		2	123	ME2054001	Smoking				
3	Which spinal segments are responsible for extension at the knee?		3	95	M011008	L3,4				
4	What should be used for eye lavage to remove foreign bodies?		4	217	SU1024001	Normal saline				

5	The commonest type of carcinoma of the lower third of the oesophagus is …….…....…?		5	48	G082010	Adenocarcinoma			
6	What term is applied to a tumour that has spread from its original site to another site in the body?		6	165	PHD082004	Metastasis			
7	What is the most common infection causing tubal disease resulting in infertility in this country?		7	158	OG054001	Chlamydia			
8	The diagnostic feature on clinical examination of ventricular rate in atrial fibrillation is ……………………		8	108	ME1014004	Irregularly irregular			
9	The usual investigation used to assess for ovulation in infertile women is a day 21 serum …………………		9	155	OG034002	Progesterone			

Assessment of outcomes for attitudes, ethical understanding, legal responsibilities, decision making skills and clinical reasoning and judgement

Learning Outcomes for Attitudes, Ethical Understanding and Legal responsibilities

The demonstration of appropriate attitudes by new medical graduates, as shown by their professional behaviour, is a key area of concern for educators and employers alike and is obviously also of great importance to patients and the public in general. It is therefore important to have attitudes as an outcome for undergraduate medical education even if it is more difficult to define what we mean by this in comparison to some of the other outcomes. The legal responsibilities of even new graduates are numerous and relate to all aspects of practice. A firm grasp of ethical principles and their appropriate application must be gained before graduation.

This could include:

Appropriate professional attitudes	*Establishing trust between doctor and patient and respect for patients and colleagues.* *Adopting an empathic, holistic approach to patients and their problems.* *Valuing and preserving patient autonomy and involving patients in decisions affecting them.* *Respect for professional institutions and health service bodies.*
Basic ethical principles and standards	*Knowledge and understanding of contemporary medical ethics and the main ethical principles of autonomy, beneficence, non-maleficence and justice.* *The duties of a doctor.* *Practical application of theories e.g. consequentialism, deontology (duty) and double effect.* *The importance of confidentiality, truthfulness and integrity.* *Dealing effectively with complaints about own performance.*
Legal responsibilities	*Particularly with respect to:* • *Death* • *Drug prescribing* • *Physical and sexual abuse of children and adults* • *Reporting of adverse medical care / standards involving other practitioners* • *Codes of conduct* • *Human rights issues*
Practice of medicine in a multicultural society	*Knowledge of and respect for differing cultures, views, beliefs and practices relating to the human body and healthcare.*
Psychosocial issues	*Those arising from patients and colleagues and relating to the multitude of differing characteristics making up the human personality.*
Economic issues	*Knowledge and appreciation of financial constraints affecting the NHS and their impact on delivery of care.*
Contributing to the advancement of medicine	*Progress in medical science and how it is achieved, particularly the potential for every doctor to contribute to such progress.* *The doctor's role in ethical regulated clinical trials.*

Learning Outcomes for Decision-making Skills and Clinical Reasoning and Judgement

Decision making, and clinical reasoning and judgement are activities in which medical undergraduates should be proficient. The new medical graduate must continue to display such skills with the additional burden of increasing responsibility for their decisions and actions. This is undoubtedly one of the most stressful aspects of the transition between undergraduate and PRHO and therefore the achievement of these outcomes to a high standard is essential.

	This could include
Clinical reasoning	*How to recognise and define the problem, analyse and interpret information and cope with limitations of information and personal limitations.*
Evidence-based medicine	*How to seek the best available evidence and keep up to date.* *How to analyse and interpret evidence and work with guidelines and protocols.* *Recognising the link between evidence-based medicine and audit and the reasons for variation in clinical practice.*
Critical thinking	*The importance of adopting an inquisitive and questioning attitude and applying rational processes.* *Recognising irrationality in oneself and others.* *The importance of own value judgements and those of patients.*
Research and scientific methodologies	*Knowledge and appreciation of quantitative and qualitative methodology including the differences between them and their appropriate usage.* *Using research and scientific methodologies to interpret investigations.*
Statistical understanding and application	*How to think and communicate quantitatively.* *Choosing and applying appropriate statistical tests with some understanding of the underlying principles and their strengths and weaknesses.*
Creativity / resourcefulness	*Creative use of techniques, technologies and methodologies.* *Demonstration of self-reliance, initiative and pragmatism.* *The importance of sometimes looking outwith conventional boundaries.*

Coping with uncertainty and error in decision making	*Appreciating that uncertainty exists and that sources of uncertainty might include:*
	      oneself
	      the environment
	      the patient
	      limits of knowledge
	How to use cognitive and intellectual strategies when dealing with uncertainty and the need to be adaptable to change.
	How to harness one's own emotional resilience and courage.
	The importance of making decisions in partnership with colleagues and patients.
	An outline of levels of responsibility in the healthcare system.

Prioritising	*Knowledge and understanding of the factors influencing priorities.* *How to prioritise one's own time as well as prioritising the care of patients both of which include management of tasks, events, time and stress.* *How to use protocols to aid prioritisation.*

Assessment of these outcomes:

General Issues

The remit was to produce workable guidelines for assessment of **(1)attitudes, (2)ethical understanding, (3)legal responsibilities (4) decision making skills, (5) clinical reasoning which results in clinical judgement.** The group noted that **communication** (without which none of the 5 outcome in our remit can be conveyed) is being addressed by Subgroup (a) and that **personal development**
(which overlaps attitudes and ethical understanding) is being addressed by Subgroup (e).

Desirability of Assessing the Assigned Outcomes

Since all the individuals serving on the Subgroup have been responsible for instruction and assessment of the assigned outcomes, we were all aware of the desirability of assessment of these. However we were aware of the difficulties which we as individuals, and others who have published, have encountered in devising satisfactory tools for assessing these outcomes.

Why Assessment Should be Carried Out?

We were convinced of the value of our task for three reasons. [1] The most important is that we are aware that unless curricular content is examined, it is likely to be passed over by students (Wakeford R. 1999).[2] We also are keen to devise reliable and valid methods of assessing this group of outcomes because we recognise the formative role of summative assessment. [3] We all desire, even need, tools which will inform us, as those responsible for teaching and learning of these outcomes, of the efficacy of our efforts.
Summative assessment is known to have two profound effects on the learners. Firstly, it gives the signal to them that a subject or topic which is examined is important. Secondly, when material is taught in a course but not assessed, most students discount it, or even disregard it altogether. These facts are so universally observed and agreed, that they may justify a faculty attempting to set an assessment in a topic or theme, even though the assessment method is known to have defined limitations.

Feasibility of Assessment

Aware of the difficulty and controversy which exists with this remit (Povar1994), the group recognised that at the end of its research and deliberations, it might conclude that no adequate methods of assessing some of these items exist. For example, in 1998, the ECFMG in the U.S.A. decided not to incorporate OSCE stations designed to measure ethical behaviour in medical graduates, because of the lack of reliable valid models.(M.Friedman 2001) An extensive catalogue of methods for assessment in medicine is contained in "The Good Assessment Guide" (Jolly & Grant 1997). This demonstrates that it is possible to assess most of the criteria about which we are concerned.

What Should be Assessed?

Whilst recognising plentiful overlap, we distinguished as requiring separate assessments:

- ATTITUDES
- ETHICAL UNDERSTANDING
- KNOWLEDGE OF LAW AS IT AFFECTS MEDICAL PRACTICE
- DECISION MAKING SKILLS
- CLINICAL REASONING LEADING TO CLINICAL JUDGEMENT

Determining the extent and limits of our 5 outcomes that should be assessed was an issue which occupied considerable time and thought for the members. In presenting our report, we have adhered to the 5 major headings which constituted our remit. Because some of these have what we consider to be important constituent parts, we have dissected these out as components of what we have chosen to call a **Philosophy of Medicine**. As the assessment tools for each of these components were defined, we found that some of the smaller components can be assessed by the same or similar tools.

Setting Standards for Assessment

This task proved our most difficult. It may not have been achieved explicitly. However, comparison of lists of criteria for rating students and inventories of achievement from the 5 Scottish medical schools, linked with standards specified by the General Medical Council indicates some standard which is being set.

Assessing Progression

It is axiomatic that the standard required during first year in medical school is different from that which is required at the point of graduation and progression into pre-registration posts. In creating our report, we have specified 3 levels throughout the undergraduate course at which the tools of assessment for our 5 outcomes are appropriate. These levels are: **[1] entry/first year [2] mid-point [3] final year/graduation.**

TOOLS OF ASSESSMENT

Preamble

It is an accepted practice in medical education that assessment of competence requires a variety of assessment methods. On the one hand, we identify *formative* and *summative* techniques. For "qualifying" examinations, a variety of tests complements each other, e.g. in-course long essays, end of course short answer written questions, multiple choice questions and OSCEs. The different domains of learning which each sets out to assess are broadly accepted, as is the fact that there is overlap. The educational concept of **triangulation** is relevant here. It means that the individual being assessed is being looked at from several different stand points, which even implies overlap in assessment methods.

There are at least three characteristics which make difficult the task of assessing the topic/theme of **attitudes**, and **ethical understanding**. Firstly, it is often said and written about medical ethics that it is a 'grey' area, i.e. that issues are rarely black and white. In medical ethical problems, answers/solutions are rarely absolutely right or wrong. Depending on how well reasoned and articulated the particular solution advocated is justified, any of more than one solution can be equally "right" or "correct".
Secondly, solutions to ethical challenges, dilemmas and problems frequently require moral judgements to be made. Whilst the practice of medicine is predominantly "good", different individuals hold widely differing positions on a variety of medical ethical issues. Thirdly, there is evidence that the acquisition of morality occurs in different individuals at different points in life (Perry (1968), Kohlberg (1975), Gilligan (1982), a process which is unlikely to be controllable by a curriculum (perhaps, even, which it would be undesirable to try to control this way). Can examination questions fairly accommodate such greyness and such varying but equally valid moral positions?

Tools currently in use in the Scottish Schools

Each member undertook to provide information about assessment methods which that individual's School is using.

ATTITUDES

Attitudes are defined as the emotional and intellectual predisposition which are the result of our efforts to make sense of, organize, predict and shape our reactions to the world (Sears et al 1991). Attitudes are described as having an affective (feeling), cognitive (thought) and behavioral (action) components. Consequently the assessment of attitudes must include all three components.
General Medical Council's Duties of a Doctor (GMC 1998) published a consensus on a national medical ethics curriculum which contains the following attitudinal principles:
_____

1. Make the care of your patient your first concern
2. Treat every patient politely and considerately
3. Respect patients' dignity and privacy
4. Listen to patients and respect their views
5. Give patients information in a way they can understand
6. Respect the rights of patients to be fully involved in decisions about their care
7. Keep your professional knowledge and skills up to date
8. Recognize the limits of your professional competence
9. Be honest and trustworthy
10. Respect and protect confidential information
11. Make sure that your personal beliefs do not prejudice your patients' care

12. Act quickly to protect patients from risk if you have good reason to believe that you or a colleague may not be fit to practice
13. Work with colleagues in the ways that best serve patients interests

In all these matters you must never discriminate unfairly against your patients or colleagues. And you must always be prepared to justify your actions to them.

Some attitudes are assessable by OSCEs. However, reliability of only 0.28 was found in a four station OSCE designed to test clinical ethics in final year medical students. (Singer et al 1993). Using standardised patients, simulated surgeries in realistic settings have been set up to measure attitudes of medical practitioners. (Jolly 1998). In both OSCEs and simulated surgeries, attitudes were inferred from behaviours demonstrated by candidates. However the actual **feelings** and **knowledge** used by candidates to arrive at their decisions were not readily evident for assessment. It can be argued that as long as acceptable decisions are made, the detailed elements which resulted in these are less important for the assessor to know about.

In Glasgow, OBJECTIVE STRUCTURED LONG EXAMINATION RECORDS (OSLERS) are used and accepted as enabling assessment of some of the attitudes on the G..M.C. list above, particularly numbers 2 to 7. The reliability and validity of simulated surgeries to deal with the other attitudinal principles need to be established. Recent psychometric techniques in the area of performance assessment point to the development of more global criteria for assessing complex behaviours (Cushing 2000). The varying contexts in which attitudes need to be measured, as well as the confounding aspects of knowledge, are major obstacles to the development of a short reliable and valid examination of attitudes using the OSCE alone.

ETHICAL UNDERSTANDING

Ethical understanding embraces awareness, (e.g. the capacity to recognise that ethical issues are present), knowledge, (e.g. of ethical principles and theories) and a clutch of communication skills (including sensitivity, both personal and moral). In practice, the five Scottish medical schools all, to some extent,
utilise HUMANITIES , to both extend and to assess ethical understanding in their students.(McManus 1995; Smith and Taylor 1996; Smith 1998; Skelton et al 2000. This view recognises that humanities instruction contributes both to enhancing ethical sensitivity and to the development of communication skills. Compassion and empathy, dealing with, as well as expressing emotions, a constructively critical approach to evidence, are all engendered by teaching humanities, which also broadens students' general education and approach to people. Dr. Blair Smith of Aberdeen argues that it is desirable to use "EXPRESSIVE OBJECTIVES" (rather than the more educationally conventional "BEHAVIOURAL OBJECTIVES") as the basis for humanities based medical education. Expressive objectives are concerned with CHANGE or DEVELOPMENT in approaching a problem or task, e.g. to appreciate or interpret a work of art, or to create a new work. Smith postulates that the PROCESS is as important as the OUTCOME, for this particular educational strategy. He considers that the PROCESS may have even greater value than OUTCOME, since, once experienced, the PROCESS can be repeated or modified for future learning, whereas the OUTCOME may be less transferable. Such an approach allows a set of assessment criteria to be developed, in which PROCESS and FORMATIVE elements are at least a important as demonstrable outcomes. Thus, RECORDED ATTENDANCE at appropriate educational sessions, or presentation of a report of group-work, even though ungraded, demonstrates that a student has GONE THROUGH A PROCESS from which some EXPRESSIVE OBJECTIVES must have been obtained.

Dr Peter Nelson of St. Andrews actually uses "case studies" from literature texts specifically for conventional continuous (i.e. formative) assessment and for summative assessments. In essence, the students are required to identify the ethical issues which are present in the case, and to analyse and comment on these. The principle of what he uses has been described by Rest (1974) as the DEFINING ISSUES TEST, the D.I.T.). Experience with this has been had in Dundee, where it has been used primarily as a tool to judge the efficacy of a particular teaching strategy or progamme in medical ethics. By its nature for students participating in the defining issues test, the process is likely to be formative. Further, the D.I.T. may subserve all 3 purposes simultaneously, i.e., course evaluation, as well as formative and summative assessment.

Two other methods of assessment of ethical understanding are in use in several of the Scottish medical schools. Both function for formative and summative assessment, although one is more formative and the other more summative. The former is a rating scale of performance, on which the students mark themselves. Then the allocated score is discussed with a tutor who knows the student fairly well. Standards of performance of a variety of behaviours are agreed mutually. (Appendix contains Aberdeen and Dundee
SCALES for Rating Students in General Practice). The other technique is time honoured essay writing. This provides student and tutor a relatively leisured opportunity to explore in depth ethical entities. Skills in recognising and analysing these can be demonstrated and rated. Further, an essay can be for the student, a vehicle for reflection, in which the tutor can observe qualities such as empathy, as well as sensitivity. For very large clases of

students, the marking of essays is very labour intensive. If the task is divided between several tutors, there is the risk of lack of consistency in scoring. To try to overcome this difficulty, Dundee and Edinburgh (and possibly others) have defined criteria by which essays should be judged and marked.(Appendix shows these CRITERIA for Dundee and Edinburgh).

KNOWLEDGE OF LAW AS IT AFFECTS MEDICAL PRACTICE

Since this material is factual, but changes constantly with new legislation, assessment of this can be done by techniques which are well established for testing knowledge and recent advances. Examples of these techniques include multiple choice questions (MCQs), extended matching items (EMIs), short answer questions, and the linked version of these, constructed response questions (CRQs).

DECISION MAKING SKILLS

This learning outcome requires some precise definition in order to recommend how it can be assessed. On the one hand, in a simplistic sense, skills to make decisions can be thought of as the capacity to <u>make</u> decisions, in contrast to the behaviour which is characterised by havering and indecision. This capacity is partly a component of personality i.e. temperament, but modulated by experience. In the context of the outcome as required for the Scottish Doctor, **decision making skills** are linked closely with **clinical reasoning leading to clinical judgement.** The quality of **decisiveness** can be rated. This is necessarily subjective to some degree, as are a number of the behaviours which are assessed by the scales contained in the appendix. The more sophisticated clinical decision making skills can be both taught and assessed. The techniques advocated by Bordage and colleagues (Bordage et al (1990) commend themselves to us although we have no first hand experience using these.

CLINICAL REASONING LEADING TO CLINICAL JUDGEMENT

Clinical reasoning, leading to clinical judgement is the practical end point at which all medical education is directed. It is delivered by the amalgamation of every one of the curricular outcomes. It is complex and sophisticated, which may be the reason that its precise assessment has been researched so little. Time honoured traditional assessment methods in undergraduate and postgraduate medicine, such as 'long' and 'short' cases, had as their aim to determine these abilities in the examinees.
A DIAGNOSTIC THINKING INVENTORY has been devised and validated by Bordage (Bordage et. al 1990) and subsequently used to evaluate the relative merits of two different strategies of instruction of clinical reasoning Round 1999). Whilst this inventory has not , as far as we are aware, been used for assessment of this outcome in Scotland, it commends itself to us as credible, feasible reliable and valid. The authors positively encourage others to use the Inventory, and to collect analyse and publish data about its use. This seems to be a 'new' tool which warrants testing in Scotland. The logistics of using it have been published. It currently comprises 41 items. Time for completing and scoring is around half an hour. The inventory distinguishes performance levels between students and doctors at different stages of their careers, and seems not to be discipline specific.

IMPLEMENTATION

Integration

For the 5 outcomes which were specifically our remit, some integration in assessment is both inevitable and desirable. As the discussions of the Subgroup unfolded, a common view emerged that teaching and assessment of these particular outcomes should, to a considerable extent be taught and assessed in a manner which is conveniently called *seamless,* i.e integrated with teaching of all other matters.

Compensation

Broadly, we do not consider that cross compensation should occur. For example, if an examinee shows an abrasive attitude to a patient, this should not be compensated for by fact that the knowledge outcome is at or above a pass level. For our particular cluster of outcomes, some flexibility, and considerable flexibility is likely to be necessary in the application of these assessment tools in **summative** use.

Assessment Types

All of the assessment tools we describe are capable of being used formatively and summatively. By definition, the *process* methods are continuous. For the others, the summative assessment progress requires evidence of progression by those who are being assessed.

Feedback

When the assessment tools described for these outcomes are used formatively, **feedback** is integral to the use of the tools. **Essay questions** which comprise a substantial part of our recommended portfolio lend themselves to positive specific feedback, which is one of their special merits for assessing these outcomes. Marking essays is enormously demanding of staff time. Our personal experience using off-line marking is that a 2000 word **ethics case discussion** takes 15 minutes to mark and rate. For a class of 180 students, 45 hours of specialist time is involved. At present for all of the 5 Scottish schools this is undertaken by one individual, in the interests of consistency. Whilst there is some sampling review done by external examiners, none of the schools has so far had the resource to double mark these submissions, in the summative context.

In Dundee, a pilot has been run in which students have marked their own constructed response questions and their own extended matching item questions. The pilot was run with double marking by staff members, High correlation occurred between marks awarded by students and staff, such that it is likely that this technique could be used for feed back.

The **attitudes** and **behaviour** rating scales incorporate **feedback** in their fabric. This is also the case with **portfolio** assessment, which has been used as an exemption examination for final summative assessment since 1999 in Dundee, and is being introduced for the same purpose in other Scottish schools.

Timing of Assessments

Our grid, *Appendix Item !*, shows the timings recommended for the tools suggested. Most of these timings are in current use at present for formative and summative assessments, but some are recommendations following the work of the Subgroup.

Personnel

Our unanimous view is that the assessment of these outcomes should be devised administered and marked by the same faculty members as deliver the instruction relevant to these. For academic and administrative reasons, a lead individual, or small committee is required to be responsible for the overall exercise.

Staff Development

Enhancing appreciation by all individuals, of all grades, from the most junior to the most senior, of the academic importance of formative and summative assessment is an ongoing need in all the Scottish schools. Whilst the recent increases in demands on clinical staff has made time available for staff development tighter, the enhanced educational roles required of trainers and trainees is inducing a spontaneous interest in and willingness to learn more about reliable and valid assessment tools.

Resources

Resources for teaching and assessment in medical schools have always been notoriously diffuse and difficult to quantify. The wide differences between the way teaching is delivered in the 5 Scottish schools makes precision of prediction about resources impossible to make.

SUMMING UP / CONCLUSIONS

The working group advises that despite cited doubts, the woolly nature of the subject matter, and differences in the maturity reached by students at any one time, **attitudes**, **ethical understanding**, **knowledge of medical law, decision making skills** and **clinical reasoning leading to clinical judgement** can be assessed. Experience and literature indicate that using a variety of different assessment techniques is more reliable than use of one only (triangulation). In practice, this observation makes the task easier, since many aspects of medical education require use of a variety of examination types. A formative component of each of these is always present (even though not always recognised), and enhances the attempt to assess. In other words, PROCESS may be as

important as OUTCOME, and participation in process can legitimately be included in the ratings made for assessment.

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Appendices

Grid summarising assessment tools and timings for deconstructed components of ethical understanding outcome – Glasgow

Attitudes and behaviour rating scales used in General Practice in Aberdeen and Dundee

Criteria used for marking case discussions, essays, portfolios and special study modules in Dundee and Edinburgh

Perry's scale of moral development

Element	Assessment Tools			
	Used Now at Glasgow	For Use at Entry to Medical School	For Use at mid-point	For Use Before Graduation
Historical Background				
Past				
Current	X			
Future				
Medical Anthropology				
Power of Health Care Professionals			X	X **portfolio**
What are these?			X	X **Portfolio**
How should they be used?				X **Portfolio**
Medicine in multicultural societies	**X**			**Portfolio/MEQ**
Relationships of doctors with: [1] individuals, [2] communities and [3] state.	**MEQ**		X	X
Moral Philosophy				
Moral Theory	**X**		X	X
Groundwork for moral theory			X	
Virtue Theory in relation to character of physicians			X	X
Medical Ethics and Professionalism				
Ends of life issues (i.e. abortion & euthanasia)	**X** **MEQ, Portfolio**		**MEQ**	**MEQ, Portfolio, Osler**
Truth telling		**X**	X	X
Ethics in medical research	**SSMs, Portfolio**		X	X
Allocation of scarce resources			X	X
Theories of medical ethics	**Short notes, Portfolios**		X	X
Rights and responsibilities			X	X
Professional codes	**X**		X	X
Pastoral Care (suffering, grief, "chronic" care)	**X** **Portfolios, MEQs, Oslers**		X	X

Evidence Based Medicine				
What is valid evidence?			X	X
Different types of evidence			X	X
Interpreting evidence in context	**SSMs**		X	X
Applying research findings to particular individual patients			X	X
Dealing with uncertainty	**Portfolios** **Block assessments** **Oslers**		X	X
Medical Law				
Consent	**Short notes**		X	X
Confidentiality	**Short notes**		X	X
Error management				X
Malpractice			X	X
Negligence			X	X
Reflective Clinical Reasoning and Decision Making				
Clinical reasoning	**Block assessment** **Osler**		X	X
Diagnostic ability	**Block assessment** **Osler** **OSCE**		X	X
Pattern recognition				X
Problem solving	**Osler** **OSCE**	X	X	X
Reflective ability	**Portfolio**		X	X
"Multiplicity", i.e. Capacity for arguing both sides of a case (Perry)		X	X	X
Ability to commit to decision			X	X
Pluralistic view of collateral issues in decision making			X	X

This grid shows the **elements** of what our group has called the "Philosophy Of Medicine". It indicates the times in
the course as well as the assessment methods used. This grid describes the current Glasgow situation. Aberdeen and Dundee grids look very similar. The St. Andrews grid is not comparable, since students go elsewhere for clinical studies.
"Block" = End of Block, "MEQ" = Modified Essay Question", "OSLER" = Objective Structured Long Examination Record.

Name of student……………………………………………….Name of assessor……………………………………………………

Attachment………………………………………………..Dates…………………………………………………………

During your attachment with me, I noted that you could:

	Clear evidence shown	Partial evidence shown	Little or no evidence shown (needs further assessment)	No opportunity to assess
Make the care of your patient your first concern				
Treat every patient politely and considerately				
Respect patients' dignity and privacy				
Listen to patients and respect their views				
Give patients information in a way they can understand				
Respect the rights of patients to be fully involved in decisions about their care				
Be honest and trustworthy				
Respect and protect confidential information				
Make sure that your personal beliefs do not prejudice your patients' care				
Act quickly to protect patients from risk if you have good reason to believe that you or a colleague may not be fit to practise				
Avoid abusing your position as a doctor				
Work with colleagues in the ways that best serve patients' interests				
In all these matters you must never discriminate unfairly against your patients or colleagues.				

Further comments

Signature of assessor…………………………………………………Date……………………………

Signature of student…………………………………………………Date……………………………

C5. Student Assessment Form   **Fifth Year**

The completed form should be considered part of your portfolio.

Name: **Practice Tutor:**

Practice Address: **Attachment Dates:**

Circle the number which best describes your assessment of the student in question. Please complete in conjunction with the tutor handbook notes on assessment.
Please note that the student will receive a copy of this assessment form as part of their end of year portfolio.

1	Clinical Skills	
♦	Excellent history taking and examination skills.	4
♦	Highly satisfactory history taking and examination skills.	3
♦	Satisfactory history taking and examination skills appropriate to stage in course. Steady improvement demonstrated during the attachment.	2
♦	Minimal level of basic skill. Needs work on history taking and examination skills. Little progress made during the attachment.	1
♦	Unable to demonstrate basic history taking and examination skills as appropriate to stage in course.	0
2	**Practical Procedures (Diagnostic & Therapeutic)**	
♦	Used every available opportunity to complete practical procedure checklists. Very high standard of practical procedures demonstrated.	4
♦	Interested, keen. High standard of practical procedures demonstrated.	3
♦	Competent in practical procedures appropriates to stage in course. Steady improvement seen during attachment.	2
♦	Little interest in practical procedures. Little improvement demonstrated during attachment. Not yet competent in practical procedures.	1
♦	No interest in practical procedures. Poor standard demonstrated.	0
3	**Patient Investigation**	
♦	Excellent understanding of appropriate investigation of patients, and interpretation of results.	4
♦	Well developed understanding of appropriate investigation of patients, and interpretation of results.	3
♦	Average understanding of patient investigations and interpretation of results.	2
♦	Borderline understanding of patient investigations and interpretation of results.	1
♦	Poor understanding of patient investigations and interpretation of results.	0

4	**Patient Management**	
♦	Highly developed understanding of range of options available with regard to patient management (self-care, medical, surgical). Always able to implement appropriately.	4
♦	Well-developed understanding of range of options available with regard to patient management. Almost always able to implement appropriately.	3
♦	Average understanding of range of options available with regard to patient management. Mostly able to implement appropriately.	2
♦	Borderline understanding of range of options available with regard to patient management. Has some difficulty in being able to implement appropriately.	1
♦	Poor understanding of range of options available with regard to patient management. Unable to implement appropriately.	0
5	**Health Promotion and Prevention**	
♦	Highly aware of the importance of health promotion/prevention issues in primary care, i.e. individual risk factors, community health, application of population studies.	4
♦	Above average awareness of the importance of health promotion/prevention issues in primary care.	3
♦	Adequately aware of the importance of health promotion/prevention issues in primary care.	2
♦	Limited awareness of the importance of health promotion/prevention issues in primary care.	1
♦	Not aware of health promotion/prevention issues in primary care.	0
6	**Communication Skills (Patients & Staff)**	
♦	Excellent communication skills. Clear and explicit with patients, relatives and colleagues.	4
♦	Above average communication skills. Seldom mis-understood or unclear.	3
♦	Average communication skills. Occasionally mis-understood, unclear or weak when communicating in some circumstances.	2
♦	Communication skills below what would be expected for students at this stage. Examples of misunderstanding more frequent.	1
♦	Poor communication skills. Often mis-understood and significant weaknesses with patients, relatives and colleagues or makes patients uneasy. Difficulty in expressing him/herself.	0
7	**Information Handling & Retrieval Skills (Patient Records & Data Sources)**	
♦	Highly skilled in ability to access a wide ranges of material (printed and electronic) and is able to integrate this easily into clinical practice. Excellent approach to the use of the patient record.	4
♦	Skilled in ability to access a wide ranges of material (printed and electronic) and is able to integrate this easily into clinical practice. Above average approach to the use of the patient record.	3
♦	Able to access a limited range of material (printed and electronic) but usually able to integrate into clinical practice. Able to use case records appropriately.	2
♦	Able to access a limited ranges of material (printed and electronic) and has some difficulty with integrating into clinical practice. Some difficulty with using patient records.	1
♦	Unable to access printed or electronic material. Unable to use clinically. Unable to use patient record.	0

8	Understanding of Basic, Clinical and Social Sciences	
♦	Shows superior comprehension of the basic pathophysiology and medical principles relevant to patients' problems.	4
♦	Shows above average comprehension of the basic pathophysiology and medical principles relevant to patients' problems.	3
♦	Shows adequate comprehension of the basic pathophysiology and medical principles relevant to patients' problems.	2
♦	Comprehension of the basic pathophysiology and medical principles relevant to patients' problems is below average.	1
♦	Shows inadequate comprehension of the basic pathophysiology and medical principles relevant to patients' problems.	0

9	Attitudes and Ethics	

9.1 Confidentiality – Did the student demonstrate awareness of patient confidentiality?		
♦	Yes, always	3
♦	Usually	2
♦	No, or incident caused concern	0

9.2 Did the student demonstrate awareness of the importance of a considered approach to ethical issues?		
♦	Yes, always	3
♦	Usually	2
♦	No, or incident caused concern	0

10	Clinical Reasoning and Judgement	
♦	Superior decision making and clinical judgement, well supported by knowledge. Well above the standard expected.	4
♦	Above average decision making and clinical judgement, well supported by knowledge. Easily meets the standard expected for stage in course.	3
♦	Shows satisfactory decision making and clinical judgement. Meets standard expected for stage in course.	2
♦	Questionable judgement in clinical situations at times.	1
♦	Deficient in clinical judgement. Often wrong in decision making.	0

11	Appreciation of the role of the Doctor within the Health Service	

11.1 Attendance		
♦	Attended all sessions. If absent made request known in advance or produced relevant documentation e.g. medical certificate.	3
♦	Occasional unexplained absence. Did not always produce supportive documentation. e.g. medical certificate.	2
♦	Sporadic or zero attendance.	0

11.2 Interest and Motivation		
♦	Highly self-motivated. Makes specific requests/asks spontaneous questions/actively participates in practice.	4
♦	Above average motivation. Actively participates in practice.	3
♦	Average motivation but may need prompting to participate at times (may lack confidence).	2
♦	Has to be prompted to participate. Sometimes fails to participate.	1
♦	Poor self motivation. Does not participate.	0

11.3 Reliability		
♦	Always reliable. Work always done. Always punctual.	4
♦	Reliable. Work usually done. Always punctual.	3
♦	Reliable. Occasionally forgetful. Work usually done. Occasionally late.	2
♦	Sometimes unreliable. Work may be incomplete. Being late becoming an issue.	1
♦	Poor reliability. Work often incomplete. Often late for duties.	0

11.4 Dress Code	
♦ Manner and appearance appropriate.	3
♦ Dress/appearance inappropriate at times.	1
♦ Manner and appearance may cause offence to patients.	0
11.5 Understanding Role of Healthcare Staff	
♦ Excellent understanding of roles of other members of Primary Health Care Team. Respectful of colleagues at all times.	4
♦ Good understanding of roles of other members of Primary Health Care Team. Respectful of colleagues at all times.	3
♦ Average understanding of roles of other members of Primary Health Care Team. Usually respectful of colleagues.	2
♦ Some lack of understanding of roles of other members of Primary Health Care Team. Evidence of lack of respect of colleagues.	1
♦ Does not understand roles of other members of Primary Health Care Team. Shows lack of respect for colleagues.	0
11.6 Team Working	
♦ Fully aware of the importance of teamwork and demonstrates an ability to integrate with the Primary Health Care Team at every opportunity.	4
♦ Above average awareness of the importance of team working and demonstrates an ability to integrate with the Primary Health Care Team most of the time.	3
♦ Aware of the importance of team working. Not always able to integrate with the team.	2
♦ Not always aware of the importance of teamwork. Some difficulty fitting in.	1
♦ No understanding of importance of teamwork. No evidence of attempt to integrate.	0
12 Personal Development	
12.1 Time Management	
♦ Highly skilled use of time; maximises use of available time.	4
♦ Above average use of time.	3
♦ Makes good use of time.	2
♦ Sometimes wastes time.	1
♦ Poor time management.	0
12.2 Self Directed Learning	
♦ Demonstrated excellent self directed learning skills and took full responsibility for own development.	4
♦ Demonstrated above average self directed learning skills and took responsibility for own development.	3
♦ Demonstrated satisfactory self directed learning skills and took some responsibility for own development.	2
♦ Requires assistance in developing self directed learning skills.	1
♦ Unable to self direct.	0
TOTAL MARK (Out of 72)	
PROJECT MARK (Out of 35)	

Categories (Please tick)

Excellent/Potential Distinction (65 - 72)   [   ]

Very Good   (55 - 64)   [   ]

Satisfactory (37 - 54)   [   ]

Refer (0 – 36)   [   ]

Distinction   [   ] Please Justify

All students who have scored a "0" or "1" in _any_ of the outcomes should be referred back to the department. Please give details on the following page.

Please use this space to comment on the student's areas of strength.

Please use this space to comment on areas where the student requires further development.

Year 5 Case Discussion – Assessment Form

Student

Please complete the following box and attach this form to your Case Discussion before submitting it to the Medical School Office, Level 10. This will form an integral part of your portfolio.

Discussions marked with a failed grade E, F or G must be revised and resubmitted by the next deadline for submissions. A pass mark (A, B, C or D) is required before inclusion in your portfolio.

Student Name: Date:
Theme (of discussion):
I confirm that this case discussion is my own original work
Student signature

Medical School Office: Date received: _____

Date Due: _____

Late submission: Yes ❐   No ❐

Theme Assessor:

Students have been asked to provide a brief (maximum 200 words) summary of their patient's presentation diagnosis and management followed by a discussion (maximum 1000 words) of the chosen theme's contribution to understanding the course of **their** patient's illness/management (see page 13 of the Phase 3, Year 5 Handbook).

Please complete overleaf, marking with a horizontal line [-] the grades, which best describe the attached Case Discussion. Then complete the additional comments section below.

Additional Comments
Does this discussion follow the required format?   Yes ❐   No ❐
Please highlight any major strengths or weaknesses: This form will be used to provide feedback to the student.

**Final Grade
(for office use only)**

Signature _____   **Date** _____

Please mark the most appropriate grade with a [-]

	A Excellent	B Very good	C Satisfactory	D Borderline	E Marginal Fail	F Clear Fail
Approach to theme:						
Understanding of theme	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Required information covered	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Absence of errors	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Communication skills:						
Clarity of expression of ideas	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Use of English	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Clarity of patient summary	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Retrieval and handling of information						
Range of reading	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Use of literature in text	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Format of references	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Clinical reasoning and analytical abilities:						
Relevance of discussion to the particular patient	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Critical and analytical abilities -						
in patient summary	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
in discussion	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

	A Excellent	B Very good	C Satisfactory	D Borderline	E Marginal Fail	F Clear Fail

Year 5 Clinical SSM - Outcome Assessment Form

Student: _____

Clinical SSM Title: _____

Supervisor: _____

The main purpose of this form is to provide feedback to the student on their progress towards the 12 outcomes during their Clinical SSM and to provide an overview of their performance for their summative portfolio assessment. Please use the guide to the general areas to be considered under each outcome (see over). Please use information from a variety of sources such as oral or written patient presentations or other SSM requirements.

A 7 point grading system is used as explained overleaf.

Please mark the most appropriate scale with a [-]

What a student will be able to do	*Highly Satisfactory*	*Satisfactory*	*Minor Defect*	*Major Defect*
1. Competent in clinical skills	[ ]	[ ]	[ ]	[ ]
2. Competent to perform practical procedures	[ ]	[ ]	[ ]	[ ]
3. Competent to investigate a patient	[ ]	[ ]	[ ]	[ ]
4. Competent to manage a patient	[ ]	[ ]	[ ]	[ ]
5. Competent to give advice on health promotion and disease prevention	[ ]	[ ]	[ ]	[ ]
6. Competent in communication skills	[ ]	[ ]	[ ]	[ ]
7. Competent to retrieve and handle information	[ ]	[ ]	[ ]	[ ]
How the student approaches their practice				
8. Understanding of social, basic and clinical sciences and underlying principles	[ ]	[ ]	[ ]	[ ]
9. Appropriate attitudes, ethical understanding and legal responsibilities	[ ]	[ ]	[ ]	[ ]
10. Appropriate decision making skills and clinical reasoning and judgement	[ ]	[ ]	[ ]	[ ]
The student as a professional				
11. Appreciation of the role of the doctor within the health service	[ ]	[ ]	[ ]	[ ]
12. Aptitude for personal development	[ ]	[ ]	[ ]	[ ]

Comments

It would be helpful if you could give further details if any of the grades above are E or less.

Supervisor's signature _____

I agree with the above assessment
Student's Signature _____
(In the event of disagreement, the student should not sign the form but take it to Dr J Dick)

It is the student's responsibility to return the original of the form to the Medical School Office within 10 days. KEEP A COPY FOR YOUR PORTFOLIO.

The following grades are used:

A	Excellent
B	Very good
C	Satisfactory
D	Borderline Pass
E	Marginal Fail (Minor Defect)
F	Clear Fail (Major Defect)
G	Bad Fail

Potential areas of relevance to the assessment of the 12 outcomes

What a student is able to do:

Competent in clinical skills
- medical and social history
- physical examination
- interpretation of findings
- differential diagnosis
- formulation of action plan

Competent to perform practical procedures
- relevant **diagnostic** procedures
- relevant **therapeutic** procedures
- (See practical procedures checklist in Record of Achievement)

Competent to investigate a patient
- relevant investigations
- cost considerations
- appropriate ordering procedures
- interpreting the findings
- *Competent to manage a patient*
- considers a wide range of treatments (e.g. surgery, rehabilitation)
- referrals
- drug therapy
- follow-up

Competent to offer advice in health promotion and disease prevention
- consideration of risk factors
- threats to the health of the community
- advice to patients regarding risk factors and health
- promotion

Competent in communication
- communication with patients and their families
- communication with staff and with health care colleagues
- general communication skills (presentations, written,
- teaching)

Competent to retrieve and handle information
- prepare and evaluate patient records
- access data sources appropriately
- uses computers when appropriate
- manages personal records effectively (logs, portfolios)

How the student approaches their practice:

Understanding of basic, clinical and social sciences and underlying principles
- normal structures and functions
- pathophysiology
- psychosocial model
- health economics
- life cycle

Appropriate attitudes, ethical understanding and legal responsibilities
- identifies important legal and ethical issues
- applies legal and ethical procedures where appropriate (e.g. informed consent, confidentiality)
- sensitive to multi-cultural and psychosocial factors
- acts as patient advocate

Appropriate decision making skills and clinical reasoning and judgement
- strategic thinking
- clinical reasoning
- critical analysis of information
- research and statistical methods

Student as a professional:

Appreciation of the role of the doctor within the health service
- professional behavior (attendance, task on time, respects colleagues)
- understands role of healthcare staff
- effective team member
- accepts code of conduct
- committed to teaching

Aptitude for personal development
- self-learner
- assessment of own performance
- responsibility for own personal and professional development.
- effective self learner
- reflect on own strengths and weaknesses
- manages time effectively
- achieve high standards of professionalism

PHASE II SPECIAL STUDY MODULE
ASSESSMENT FORM

Student Name: _____

Year (MBChB): _____

Module Title: _____

Module ID No: _____   Date Module Attended _____

Rating Scale		Grade
Attainment of Course Objectives (Course Work)	**Weighting**	**70%**
10 Course work of an exemplary standard. Extensive knowledge beyond that of the module. Excellent ability to critically appraise material and apply to specific issues. Vastly superior to average student.		10 [ ] 9 [ ] 8 [ ]
6 Course work of average standard. A good knowledge of the material covered in the course, satisfactory ability to critically appraise material and apply to specific issues.		7 [ ] 6 [ ] 5 [ ]
4 Course work below average. A poor knowledge of material covered in the course, lack of ability to critically appraise material and apply to issues.		4 [ ] 3 [ ] 2 [ ]
0 Course work not completed.		1 [ ] 0 [ ]
Interest and Motivation	**Weighting**	**15%**
10 Highly self-motivated. Mature approach to activities. Makes specific requests beyond that expected. Noticeably more motivated than the average student.		10 [ ] 9 [ ] 8 [ ]
6 Always participates. Asks spontaneous questions. Average student.		7 [ ] 6 [ ]
4 Poor self motivation. Has to be prompted to participate in activities. Shows little interest.		5 [ ] 4 [ ]
0 Very poorly self motivated. Can not be prompted to participate.		3 [ ] 2 [ ] 1 [ ] 0 [ ]
Reliability	**Weighting**	**15%**
10 Reliability exemplary, much better than the average student.		10 [ ] 9 [ ] 8 [ ]
6 Always reliable, present and prompt. Expected standard.		7 [ ] 6 [ ]
4 Occasionally forgetful.		5 [ ] 4 [ ]
0 Poor reliability. Work not well done or incomplete. Often absent/late for duties.		3 [ ] 2 [ ] 1 [ ] 0 [ ]

Attendance

Has the student's attendance at the SSM been adequate *(see note below)*   Yes/No
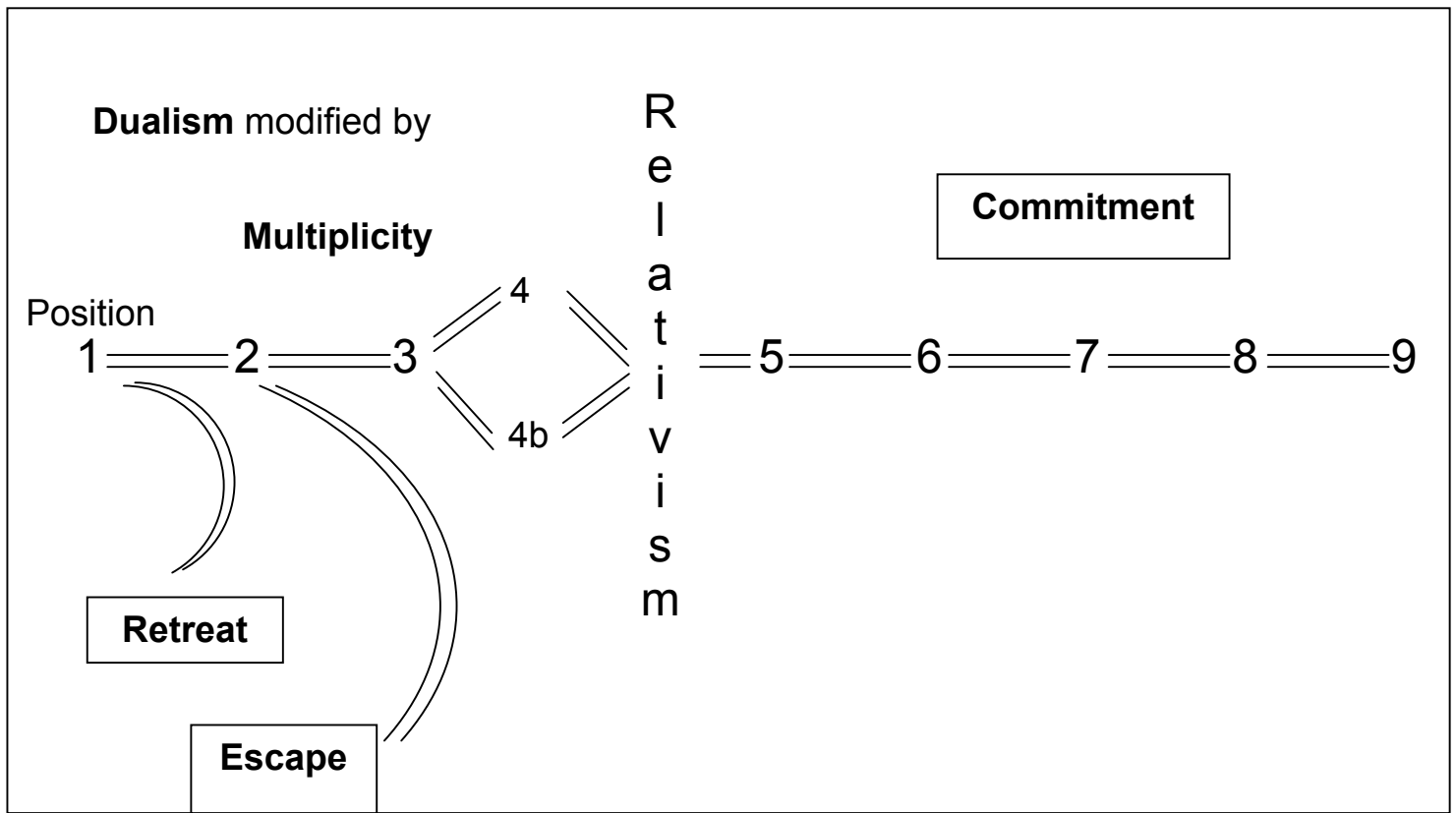i.e. at least 75% of the time

Please give an overview of the student's performance while attached to your unit. We are particularly anxious to gauge an appreciation of the student's strengths and weaknesses.

Signature of Supervisor: ....   Date ....

Supervisor Name: ....
(BLOCK CAPITALS PLEASE)

*SSMs vary greatly in formal attendance requirement. The question of adequate attendance is a matter of judgement by the Course Organiser, but for the module involving frequent meetings of the class, an attendance at least 75% would be expected.

**Please return to Liza Kingston, Medical School Office, Level 10,
Ninewells Hospital and Medical School, Dundee. DD1 9SY**

Dualism modified by

Multiplicity

R
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Commitment

Position
1 —— 2 —— 3 ⟨ 4 / 4b ⟩ —— 5 —— 6 —— 7 —— 8 —— 9

Retreat

Escape

Dualism:
Division of meaning into two realms - Good versus Bad,
Right versus Wrong, We versus They, All that is not
Success is Failure, and the like.
Right Answers exist somewhere for every problem, and
authorities know them. Right Answers are to be
memorized by hard work.
Knowledge is quantitative. Agency is experienced as
"out there" in Authority, test scores, the Right job.

Escape
Alienation, abandonment of
responsibility. Exploration of
Multiplicity and Relativism for
avoidance of Commitment

Temporizing
Postponement of
movement
for a year or more

Multiplicity
Diversity of opinion and values is recognized as
legitimate in areas where right answers are not yet
known. Opinions remain atomistic without pattern or
system. No judgements can be made among them so
"everyone has a right to his own opinion; none can be
called wrong."

Relativism
Diversity of opinion, values, judgement derived from coherent
sources, evidence, logics, systems, and patterns allowing for
analysis and comparison. Some opinions may be found
worthless, while there will remain matters about which
reasonable people will reasonably disagree. Knowledge is
qualitative, dependent on contexts.

Retreat
Avoidance of complexity and
am-bivalence by regression
to Dualism coloured by
hatred of otherness

Commitment
An affirmation, choice, or decision (career, values,
politics, personal relationship) made in the awareness of
Relativism. Agency is experienced as within the
individual

1   Authorities know, and if we work hard, read every word, and learn Right Answers, all will be well

But what about those Others I hear about ? And different opinions ? And Uncertainties ?   Some of our own Authorities disagree with each other or don't seem to know, and some give us problems instead of Answers.

2   True Authorities must be Right, the others are frauds. We remain Right. Others must be different and Wrong. Good authorities give us problems so we can learn to find the Right Answer by our own independent thought

But even Good Authorities admit they don't know all the answers yet!

3   Then some uncertainties and different opinions are real and legitimate *temporarily,* even for Authorities. They're working on them to get to the Truth

But there are so many things they don't know the Answers to ! And they won't for a long time.

4a Where Authorities don't know the Right Answers, everyone has a right to his own opinion; no one is wrong!

But some of my friends ask me to support my opinions with facts and reasons.
And/or   Then what right have They to grade us ? About what ?

4b In certain courses Authorities are not asking for the Right Answer; They want us to *think* about things in a certain way, *supporting* our opinion with data.. That's what they grade us on.

But this "way" seems to *work* in most courses, and even outside them.

5. Then *all* thinking must be like this, even for Them. Everything is relative but not equally valid. You have to understand how each context works. Theories are not Truth but metaphors to interpret data with. You have to think about your thinking.

But if everything is relative, am I relative too? How can I know I'm making the Right Choice ?

6   I see I'm going to have to make my own decisions in an uncertain world with no one to tell me I'm Right.

I'm lost if I don't. When I decide on my career (or marriage or values) everything will straighten out.

7   Well, I've made my first Commitment!

Why didn't that settle everything ?

8   I've made several commitments. I've got to balance them - how many, how deep ? How certain, how tentative

Things are getting contradictory. I can't make logical sense out of life's dilemmas.

9   This how life will be. I must be wholehearted while tentative, fight for my values yet respect others, believe my deepest values right yet be ready to learn. I see that I shall be retracing this whole journey over and over - but, I hope more wisely

Assessment of outcomes for The Role of the Doctor within the Health Service and Personal Development

The Learning Outcomes for the Role of the Doctor within the Health Service

This is a rapidly changing area of medical education and practice, which is subject to many external influences including political, legal and economic. However, there are a number of key outcomes applicable to the new graduate, awareness of which should provide a firm basis for dealing with future developments and changes within the health service.

	This could include:
Healthcare systems	*An outline of:* • *the structure of the medical profession in the UK* • *the professions allied to medicine* • *roles and relationships of primary, secondary and tertiary care* • *NHS organisation* • *the origin and history of medical practice* • *systems that impact on the NHS e.g. private medicine, EU, complementary therapies, etc.*
The clinical responsibilities and role of a doctor	*The "Duties of a Doctor" as defined by the General Medical Council.* *Appreciation of the medical profession as a voice in society and an agent of change.* *The importance of valuing and participating in professional audit.*
Code of conduct and required personal attributes	*Duties of a Doctor (GMC)* *Local codes where applicable.*
The doctor as researcher	*Appreciation of the value of medical research and how this is organised and funded in UK and Europe.* *Outlining the potential role of research in career progression and the opportunities for research even as an undergraduate.*
The doctor as mentor and teacher	*The importance of reflecting on and analysing own experience of mentors and teachers identifying the "positive" and the" negative" and how to use this in one's own practice as a teacher of others.* *The importance of adopting a culture of life-long learning and fostering this in the health service.*
The doctor as manager	*Managing people and resources e.g. financial.*
The doctor as a member of a multi-professional team and the roles of other healthcare professionals	*The opportunity to learn with and be taught by other healthcare professionals during undergraduate education with an understanding of the benefits to be gained by all concerned including patients.* *Working with other healthcare professionals in the context of patient care as an undergraduate in order to better develop team-working, leadership and facilitative skills.*

Learning Outcomes for Personal Development

Personal development within the context of undergraduate medical education is a complex issue. The underlying personality of the individual graduate and his/her life experiences outwith the university have a major influence on personal development, as do experiences relating specifically to their training. Personal development is, of course, an ongoing, life-long process but it is possible to identify a number of important outcomes for the undergraduate period.

	This could include
Self-awareness	*The ability to conduct oneself as a reflective and accountable practitioner including seeking out sources of informed criticism and valuing, reflecting and responding to them appropriately.* *Enquiring into own competence and evaluating own capabilities and personal effectiveness*
Self-learner	*The ability to manage own learning as demonstrated by:* • *searching out and selecting appropriate learning resources of all types* • *making use of all available technical aids* • *employing appropriate and effective study skills* • *recognising limitations of current personal understanding and capabilities and identifying areas needing refreshed or extended* • *setting realistic and appropriate personal learning goals* • *selecting learning strategies that take account of personal learning preferences and that are likely to succeed* • *setting challenging personal learning goals as a basis for personal growth*
Self-care	*Recognition of the pressures of a demanding professional life on health, well-being and relationships with others and the need to maintain a balance between personal, professional and social goals and activities.* *Evidence of attention to lifestyle, diet, exercise and relaxation.* *Making use of available help and advice in stressful circumstances.* *Recognition of the hazards of self-medication or substance abuse in dealing with stress.*
Career choice	*Identify short and long-term career and personal plans and aspirations and work towards these by establishing realistic development plans involving relevant activities.* *Participate fully in the life of the professional community and make use of professional and other networks of all types.*
Motivation	*Recognising key personal motivating factors and their importance in sustaining a high level of motivation.*
Commitment	*Demonstrating dedication to one's chosen career pathway through adherence to the codes of conduct and behaviour expected of undergraduate medical students and doctors and an acceptance of any limitations that might be associated with them.*

Assessment of these outcomes:

General Issues

The Doctor as a professional:
Outcomes for the role of the doctor within the health service
Outcomes for personal development

The desirability of assessing the assigned outcomes
The principles of assessing the Scottish Doctor outcomes in Domains 11 and 12 were much debated. Whilst there was agreement that most of the higher level outcomes were all appropriate, there was some discussion about the detailed level 2 outcomes, and the appropriateness of all of these at undergraduate level. Additional outcomes were also identified. Examples of some these are described below, and a complete record of suggested changes is found as highlighted text in Tables 1 and 2 .

Examples of level 1 outcomes not thought to be appropriate include in Domain 11 'How medical research is organised and funded in UK and Europe' and 'Managing financial resources'.

Additional outcomes suggested include for example, in Domain 11 'An understanding of and participation in Clinical Governance'. In Domain 12, it was suggested that there should be specific mention of the 'awareness of occupational hazards', and 'knowledge of the structure of the medical profession' the latter contributing to the outcome on career choice,

Some of the outcomes were considered to be learning opportunities rather than learning outcomes. For example in Domain 11 the level 2 outcome 'the opportunity to learn with and be taught by other health care professionals during undergraduate education, which is to some extent dependent on the curriculum provided by the school rather than the student.

It was also noted that there was duplication with other domains (e.g. Attitudes and Ethical Understanding), and sometimes across the two 'Doctor as a Professional' domains e.g. Domain 11 'the importance of adopting a culture of life learning…' overlapping with Domain 12 'self learner'.

Why assess?
With the caveats outlined above and detailed in Tables 1 and 2, it was agreed that the majority of the outcomes should be assessed. Although few of the outcomes in Domains 11 and 12 include clinical knowledge even in its widest sense, they do include knowledge of health care systems, generic and transferable skills and personal attributes. All of these will be of lifelong value. It is important that both institutions and individuals know that students have achieved the necessary standard in these topics. The reasons for assessment include the need to identify problem areas and problem students as well as to positively identify those students who meet the professional criteria we have identified. It is emphasised that identification of problems should be done as early as possible in the curriculum to allow remedial measures to be introduced, and to this end progression and tracking of students against a core set of outcomes should be considered. It was also recognised that there would be commonality between the assessment of some of the personal/professional attributes and the Fitness to Practise discussions which are ongoing. However the role of fitness to practise and its concurrence with the academic curriculum may not always be contiguous. We need to be clear to which framework the Scottish Doctor contributes. Explicit guidance on issues of confidentiality and information held on the student record from assessment exercises would need to be provided.

What to assess?
As already discussed there are some areas within Domain 11 and 12 which we do not think should be assessed, either because they are un-assessable in a meaningful way or because they are out-with the undergraduate curriculum. Other topics may only be amenable to formative assessment, at least in the earlier undergraduate years, such that the assessment per se is part of the educational process. This is particularly the case with for example, team working skills, self awareness, presentation skills and attitudes. In some cases formative assessment alone may be sufficient, which does not necessarily exclude a permanent record being maintained in a portfolio and the student having the opportunity to refer to and reflect on the assessment.

How to assess
Different methods of assessment are essential in a balanced assessment portfolio. This is to match assessment to outcomes, to provide a range of types of assessment so that students finding particular difficulty, for example with written assessment have an opportunity for compensation through excellence in other media, and to give students a wider experience. Direct and indirect methods should be used to give as complete and authentic a picture of the

student as possible. It should be remembered that assessment is an integral part of the educational cycle and contributes not just to the student's progress but also to course evaluation and revision.

For Domains 11 and 12 we have largely recommended assessment methods which test attitudes and behaviour and depend on reflection and synthesis rather than reproduction of factual information, although this is not totally excluded. Tutors' reports on attitudes, commitment, and motivation may be the most appropriate tool to use, if there is an opportunity for the tutor to get to know the student. The general practice attachment which is normally one to one is ideal for this, although issues of consistency and subjectivity need to be borne in mind. Validated tools are available and there is the possibility of adopting the RITA scale which would provide a link with the postgraduate years. Many of the outcomes in these two domains should be assessed in an integral way with other outcomes. For example, attitudes and professional behaviour can be specifically part of marking schedules for OSCE stations, and assessment topics within health care systems would be a specific part of guidance for, and marking schedules for, oral patient case studies, or written reports.

In summary our current recommendations are for the following principal methods of assessment, using a mosaic approach:
- Continuous assessment/tutor's reports
- Educational mentoring and appraisal
- Reflective essays
- Portfolios
- Patient studies and OSCE stations to assess attitudes and approach to patients
- Written questions and MCQs are expected to play a smaller part in assessing the student as a professional

Because we have recommended the use of SSMs as a vehicle for some of the assessments it may be that not all students will have exactly similar sets of marks. However it is important that flexibility of systems allows all students to have an assessment mark (although the source of this mark may differ from student to student and university to university, for each outcome).

Setting standards

Within many of the outcomes in Domains 11 and 12 the difficulty is defining a measurable minimum standard. The group recommends defining the minimum standard for the outcomes in terms of behaviour for that stage e.g. for self-directed learning within problem based learning in Year 2: 'defines questions for the group and contributes well researched information'. Such statements however contain subjective decisions: how many questions must an able student form and how much information must s/he contribute? Such inter-observer variation in definition may be reduced by frequent assessment by different observers in various professional situations (see discussion paper on Continuous Assessment) but the validity and reliability of these assessments warrants further investigation. Judgements about the outcomes Motivation, Self-care and Commitment will similarly be very difficult but by identifying the important markers or criteria, standards for each stage of a student's study can be developed. Within Personal Development there is the added complication that students may achieve the minimum standard at different stages of the course. Therefore although criterion referencing is the most stringent method of setting standards, there will be some outcomes which depend at least to some extent on the individual maturity of the student and a normative weighting should be applied dependant on the stage of the student's career. Students' maturity and even personality traits may need to be taken into consideration if there are doubts about suitability for progress and findings from such assessments may in the longer term inform the admissions policy of medical schools.

Standards for the various recommended assessments have not been described in detail other than where examples of current practice are provided (see Appendices 3 and 4).

Assessing progression
Following on from 1.5 above there will be some outcomes where progression through the undergraduate years will be expected and the student would be expected to reflect, learn and build on experiences from one year to the next. This will support the attribute of reflection, lifelong learning, and setting goals, and tie in with personal learning plans for postgraduate continuing professional development. For example within 'Self-directed Learning' in the later years not only would a student be expected to frame pertinent questions and contribute well researched information, but s/he would also be expected to critically appraise that information. Therefore assessing progression could be done through defining outcomes in behavioural terms for each stage of the curriculum.

There are some personal attributes and skills however which are either present or not and may not show progression in the true sense e.g. time management. However by repeatedly setting this as one of the criteria in continuous assessment it emphasises to students its importance in professional life and identifies those students who may need help to improve these aspects.

Assessing students' progression in many of the outcomes in Domains 11 and 12 may be assisted by use of students' portfolios which they maintain across the whole undergraduate curriculum, with summary sheets for each year. IT developments should make this practical to implement and monitor, facilitating the identification of issues for attention from both the cognitive and affective domains (see discussion document on Portfolios)

SUMMARY OF CURRENT ASSESSMENT IN ABERDEEN, DUNDEE, EDINBURGH & GLASGOW: THE DOCTOR AS A PROFESSIONAL

Domain 11: Role of the Doctor within the Health Service

Outcomes	Aberdeen		Dundee		Edinburgh		Glasgow	
	Formative	**Summative**	**Formative**	**Summative**	**Formative**	**Summative**	**Formative**	**Summative**
Healthcare systems	Oral presentations Phase I. Short notes in learning log and discussion topics tutorial/Phase III. Case study presentations Phase III.	Some students in Phase II choose this as an essay topic. Written long case report Phase IV. Often part of elective project/SSM Phase IV. May be topic for project work in Phase IV.	(Taught Year 2 and PRHO preparation block)	Could occur as question in Year 2 or 3 integrated exam.		Essay, MCQs & MEQs in Year 1 Health&Society Examination. OSCE questions on management of patients. Portfolio patient studies.		Included in examination at the end of each year. Short note questions, MEQs modified long case
History of Medicine/ Complementary Medicine						SSMs offered in History of Med.		Not assessed
Clinical Responsibilities Role of Doctor Code of conduct		Project reports Phase IV.	Integrated ethics course. GMC duties phase 2	Ethics in integrated exam Years 2 – 4 SSM programme Portfolio - audit	Tutor and peer assessment of contribution in group activities e.g. PBL, SSMs Used formatively and summatively.	Essay & MEQ in Ethics section of Year 1 Health & Society examnation. Continuous assessment in clinical attachments. OSCEs e.g. communicating with patients. Portfolio patient studies and overview essays. 40% students perform audit as SSM in Year 4.	Student/Facilitator Year 1, 2 & 3	Has been included in Year 2 exam. Supervisor/stude (4/5) MEQ, Block course work..

SUMMARY OF CURRENT ASSESSMENT IN ABERDEEN, DUNDEE, EDINBURGH & GLASGOW: THE DOCTOR AS A PROFESSIONAL

Domain 11: Role of the Doctor within the Health Service contd.

Outcomes	Aberdeen		Dundee		Edinburgh		Glasgow	
	Formative	**Summative**	**Formative**	**Summative**	**Formative**	**Summative**	**Formative**	**Summative**
Doctor as a researcher		All reports must be properly referenced . Projects in phase IV often include an element of research and require knowledge of critical appraisal.		EMI Phase 2 4th year assignment. Theme SSMs EBM critique for 3rd Year CRQ exam BMSc course	Formative feedback from PBL tutors and SSM supervisors.	References must be properly cited. Some aspects are assessed through PBL activities and reports. ICA & Exam questions on EBM &critical appraisal. SSMs	Not assessed in standard course	Portfolio (referenced). Library projec (referenced). BSc Course.
Doctor as mentor/man ager	Oral presentations Phase II. Personal needs assessment completed jointly by student and tutor in Phase III and IV GP attachment.		Peer tutoring (4/5 Year tutoring 2/3 Years)		Oral presentations in Year 1 Options, in Year 2 Options and Patient Studies (Intro to Clinical Practice Year 2). Formative feedback from PBL tutors and SSM supervisors	Assessment of explanation to patients in Patient Studies Year 2, Portfolio cases & OSCEs Years 3-5. Peer / tutor assessment of in PBL and Options. Exam q I Year 1 exam on resource allocation.	Student/Supervisor assessment form (Year 1-5)	Not summativ assessed.
Doctor as member of multi-disciplinary team	Case study presentations Phase III	Phase I CC MEQs Long case reports Phase IV	Ward simulation exercise; 2nd & 3rd Year (2 hours each).	Phase 2 & 3exams. Compulsory questions.		OSCE question on management of patients. Portfolio case studies Years 3-5.		Examined in Years 1, 2 & MEQs, short notes questions, OSCE, Course work, Block course work.

SUMMARY OF CURRENT ASSESSMENT IN ABERDEEN, DUNDEE, EDINBURGH & GLASGOW: THE DOCTOR AS A PROFESSIONAL

Domain 12: Personal Development

Outcomes	Aberdeen		Dundee		Edinburgh		Glasgow	
	Formative	Summative	Formative	Summative	Formative	Summative	Formative	Summative
Self awareness	Formative assessment on competence completed jointly by student and tutor in Phase III and IV GP attachment Phase I posters and presentations in SSM marked by both students and tutors.	Individual contributions to group projects marked by colleagues Phase I CC and SSMs in Phase II.	Reflective videos Record of achievement Phase 2		CV submitted to Director of Studies annually for review and feedback. Reflective account of Year 4 SSM.	Annual Record of Achievement includes exercises in self-assessment. Reflective account e.g. Role in Year 1 SSM; Communication with family in community project. Portfolio overview Continuous assessment in PBL, SSMs and clinical attachment	Student/Facilitator (1, 2 & 3)	Student/Facilita Year 4 & 5. Ca presentations Y 4 & 5.
Self learning		Poster assessments Phase I CC MEQs Phase I	Record of achievement Phase 2 Portfolio Phase 3 SSMS Case presentations	Computer skills OSCE station Year 2	Library quiz Term 1, Year 1. Medline search. Oral presentations as above. Computer skills Year 1.	Technologies in assignments e.g. Posters in Year 1 Option. Web page for Year 2 Option. A-V aids for Year 3 oral presentation. Record of Achievement. Continuous assessment. Portfolio overview	Student/Supervisor/ Facilitator Year 1, 2, 3, 4 & 5	Medical independent learning exerci: (Year 1) Student/Superv Year 4 & 5
Self care		MEQ Phase I	Taught – not assessed (CVS risk profile)		May be picked up as part of continuous assessment.	Assesses only knowledge of risk factors.		Not assessed

SUMMARY OF CURRENT ASSESSMENT IN ABERDEEN, DUNDEE, EDINBURGH & GLASGOW: THE DOCTOR AS A PROFESSIONAL

Domain 12: Personal Development

Outcomes	Aberdeen		Dundee		Edinburgh		Glasgow	
	Formative	Summative	Formative	Summative	Formative	Summative	Formative	Summative
Career choice			Not assessed		CV is looked at annually by Director of Studies	May be included in Portfolio overview.		Not assessed
Motivation and commitment	Contribution to Phase III GP attachment Tutor mark, completed formatively and summatively jointly by student and tutor in Phase III and IV GP attachment.		Outcome assessment forms Phase 3		Continuous assessment on Year1 Community Project; PBL; and Years 2 -5 clinical attachments.	Continuous assessment used formatively and summatively but often only at end of clinical attachment / PBL/SSM. Portfolio overview essays on Ethics or Personal Development.	Student/Facilitator Years 2, 3, & 3	Student/Superv Years 4 & 5.

ASSESSMENT OF PERSONAL & PROFESSIONAL DEVELOPMENT OUTWITH MEDICINE

In our research on assessment of the Doctor as a Professional, we looked to business, the forces and other university courses for professions for further information and ideas.

We studied selection techniques used by non-university organisations since it was considered that this would be the stage where most of the 'assessment' of personal attributes and skills as well as potential for personal development would occur.

The selection processes used by businesses are many, varied, and still much debated. The important principles are for the company to be sure of its desired person specifications (very similar to our desired outcomes for a medical student) and to match the assessments with the desired attributes, skills, knowledge or potential to develop these. This usually requires a variety of types of assessment against defined criteria performed by trained assessors. The types of assessment used include:
- application forms
- interviews (popular in business even though validity is in doubt)
- specific selection tests e.g. based on current knowledge and skills, or on aptitude, or even personality. One example of personality tests is the Minnesota Multi-phasic Personality Inventory (MMPI).
- references
- group tasks

Assessment Centres
These were the brainchild of the British War Office Selection Board during World War II and employed a range of the types of assessment above to select individuals with the specific attributes and competencies which best described the desired person specification. They are still used by the armed forces, the British civil service, the police force and some multi-national companies. Well designed assessment centres have demonstrated success at choosing potential employees. Research suggests that their assessments have a predictive value of future ability of 0.8. It must be noted however that the system is resource expensive. Assessment of eight potential employees may take one to several days while being observed by a number of assessors. This level of resource is unlikely to be available in medical schools to evaluate potential students or assess current students in concentrated sessions.

Post selection assessment
Many business organisations rely on experiential learning, support and feedback to encourage personal development of their current employees. They see accurate feedback and appraisal as key steps in increasing motivation and therefore the company's success.

In the police force however, after selection, there is a two-year probationary period during which there are assessments of knowledge, skills and competencies which in medicine we would identify as Personal and Professional Development:
- communication skills
- self-motivation
- relationships with colleagues
- decision-making
- self-management
- team-working

The assessments on these competencies are clearly defined and carried out by training sergeants or tutors who give detailed feedback to the probationers and offer further training when necessary. The probationers also keep a log book of experiences to which they add their own self-assessments and signed entries when they achieve specific objectives. Concerns about fitness to serve as a police officer may be raised by any member of staff and will trigger close scrutiny of abilities, log book and attitudes. Probationers may be asked to leave the force at any time during their two years if they fail to meet the minimum standards in any aspect of their work e.g. attitudes.

In summary assessment of personal & professional development in business and the forces is not different from ours in medical schools i.e. we are all striving to identify the criteria which best describe the person specification and design tests which can assess these as accurately and objectively as possible. This requires clear definitions of outcomes, multiple assessment methods fit for purpose, training of assessors and good feedback to learners. There are however some specific assessment tools especially tests of personality which warrant further consideration within the context of medical practice and may have most use as a predictor of attributes at the time of selection.

Assessment of Personal and Professional Development in other Undergraduate Courses

As in medicine other professions such as dentistry and veterinary medicine are stuggling to define their outcomes in these domains and design appropriate assessments. Within one veterinary medical school the students receive the 'Guide to Professional Conduct' on graduation and during the course receive lectures on jurisprudence and ethics. Declaring a student or practitioner unfit to practise on grounds of behaviour however would require a new Veterinary Surgeon's Act.

Even though poor communication skills is well recognised by the Veterinary Defence Society to be a major cause of litigation in practice, there is little formal teaching or assessment of these skills as an undergraduate. There is an initiative by the VDS in two English colleges to train students using actors so this is likely to develop in the next few years.

Other aspects of personal and professional development such as self-awareness, self-directed learning, career choice and self-care are all gaining in importance in the opinion of those who design the undergraduate veterinary curricula but these courses appear no closer to achieving systematic inculcation and assessment of the desired attitudes, skills and knowledge pertinent to personal and professional development than in medicine. However both veterinary medicine and dentistry benefit from having a small number of students on course and much of the development and assessment of personal attributes can occur during clinical placements when students often have personal tutors. All dental schools arrange timetabled meetings between students and personal tutors to review academic progress and consider personal difficulties.

There is little on personal and professional development in the undergraduate law courses because it is not purely a vocational course and many law graduates do not pursue a career as a solicitor or lawyer. The skills within the law course are therefore more generic. Emphasis on the lawyer as a professional is placed on the post graduate training within the Diploma of Legal Practice. The Law Society of Scotland has recently redesigned the Diploma course to 'ensure as far as possible that all qualifying solicitors are fit and proper persons to enter the profession'. Some aspects of the Diploma course and its assessment aimed at addressing personal and professional development include the following. Each student completes a log book and this is reviewed every quarter by the Supervisor who will comment on professional abilities and attributes as well as specific knowledge and skills. The Supervisor also provides an annual report on the student and in the Finals students are asked to review cases which have been reported to the Law Society e.g. 'What are the considerations and conflicts when a lawyer is asked to be on a company board of directors?'. The latter is particularly designed to test their moral and ethical awareness and their strategies for ethical decision making.

Veterinary, dental and legal professions all have governing bodies similar to the General Medical Council with responsibility for ensuring that registered members are fit to practise. Degrees in dentistry and veterinary medicine and the postgraduate diploma in legal practice all confer professional rights to practise but also responsibilities to adhere to the relevant Council's Code of Practice. We found evidence that some medical schools throughout the UK had constituted their own fitness to practise committees to review certain students' performance when concern had been raised on non-academic issues. (See discussion document on Fitness to Practise.) We are not aware of other professional courses invoking the authority of such committees.

Sources of information

1   Human Resource Management Resources on the Internet at http://www.nbs.ntu.ac.uk/depts/hrm/hrm-link.htm

2   Guide to 360 degree feedback used in personal development for "manager" evaluation, self evaluation, peer evaluation, etc. at http://www.360-DegreeFeedback.com

3   Chartered Institute of Personnel and Development (free subscription) at http://www.ipd.co.uk

4   Armed Forces Careers/Recruitment Office (Aberdeen): Personal Communication with Dr J Furnace

5   Grampian Police Force Recruitment and Training Division (Aberdeen): Personal Communication with Dr J Furnace

6   The Dick Veterinary Medical School, Edinburgh: Personal Communication between Dr J Furnace and Dr Colin Stead, Associate Dean for Undergraduate Students

Recommendations for assessment of medical students in outcomes for the role of the doctor in the health service

Outcome	Formative Assessment	Summative Assessment
Healthcare systems *The structure of the medical profession in the UK.*	This outcome is related to Career Management /Choice and as such can be formatively assessed during educational mentoring. (See discussion paper on Mentoring).	Summative assessment of knowledge about 'the stucture of the medical profession in the UK' was not felt to be essential. Aspects of this outcome relating to *governance* of the medical profession could be assessed under Clinical Responsibilities, Role of Doctor and Code of Conduct, see below.
The professions allied to medicine. **(perhaps better called Healthcare Professionals)**		This is considered a very important part of Healthcare Systems and should be examined in relation to the management of individual cases. Many modes of assessment are suitable e.g. written examinations, patient studies, OSCE stations, vivas, and portfolio overviews.
Roles and relationships of primary, secondary and tertiary care		Again these should be assessed in relation to the management of individual cases via the modes described above.
NHS organisation		There is probably no need to examine NHS organisation summatively at an undergraduate level. Some schools include MCQs and other written assessments on this, particularly in relation to allocation of resources. It is suggested that such an exercise may be very valuable in assessing students' ability to analyse the issues around resource allocation while considering the ethical dimensions
The origin and history of medical practice.		There is probably no need to examine history of medicine summatively at an undergraduate level.
Systems that impact on the NHS e.g. private medicine, EU, complementary therapies, etc.		The working group considered private medicine and EU legislation and funding to be post-graduate topics. Complementary therapies should be considered under Domain 4, Outcomes for Patient Management.

Recommendations for assessment of medical students in outcomes for the role of the doctor in the health service

Outcome	Formative Assessment	Summative Assessment
Clinical responsibilities Role of Doctor <u>AND</u> Code of Conduct and required personal attributes	Educational appraisal / mentoring based on information provided by the student (See discussion paper on Educational Mentoring & Appraisal)	*Assessments of these outcomes will clearly overlap with those of Outcomes 9 and 12.* ***Some or all of these assessments should be collected or tracked separately from purely academic results to inform Fitness to Practise procedur**es. (See discussion paper on Fitness to Practise procedures).*
The "Duties of a Doctor" as defined by the General Medical Council.	Whenever possible students should receive formative feedback on continuous assessment during the attachment / project as well as at the end.	This was considered a very important outcome and should be assessed **repeatedly** throughout the course using different modes e.g. MEQ, essays, OSCE stations, patient studies, vivas. Continuous assessment in PBL, SSMs, ward attachments (See discussion paper on *Fitness to Practise procedures*). Portfolio overview essays which may look at the ethics, communication skills and professional development aspects of 'Duties of a Doctor'
Appreciation of the medical profession as a voice in society and an agent of change.		*Although important to raise awareness in students that they can create change in society (overlap with outcomes in Domain 12) it was not considered necessary to assess. Specific role of doctors creating change through Public Health measures could be assessed in other domains.*
The importance of valuing and participating in professional audit. ***Group suggests that understanding of and participation in Clinical Governance be added to these outcomes.***		SSMs offer many students the opportunity to perform audit and it is recommended that every student carry out one audit and write a report which demonstrates how this information links with Clinical Governance. Other projects related to audit and clinical governance could include being part of a Clinical Governance Council and submitting a report on the research and work done in that team. Understanding of the role of audit and Clinical Governance could also be assessed in a lesser way within case reports. *There is a great deal of overlap of these outcomes with 'the Doctor as a Researcher'. Please see assessment in this outcome also.*

Recommendations for assessment of medical students in outcomes for the role of the doctor in the health service

Outcome	Formative Assessment	Summative Assessment
The doctor as a researcher *[Appreciation of the value of medical research and how this is organised and funded in UK and Europe.] – see note below.* ***The working group recommends that the emphasis of the specific outcomes should be on 'Knowledge and Skills Relevant to Researcher'along with 'Appreciation of the value of medical research'***		There is overlap of these outcomes with those in Domain 10, Evidence-based medicine. More specific assessment of basic skills e.g. Critical appraisal would fall within EBM. The working group recommends that these outcomes are best assessed through students' own research and audit. Several schools offer audit as an SSM – we recommend that all students get at least one opportunity to perform audit during the course. Basic research skills, ability to reference work and discuss own findings in context of others' work can all be assessed through project reports especially within SSMs. Increasing numbers of students are taking intercalated Degrees (BMedSci for example) and have these skills developed and assessed during this year out. Portfolio case reports and review essays can be used to assess students' appreciation of the roles of medical research, audit and clinical governance in diagnosis and management of specific diseases.
('How medical research is organised and funded in UK and Europe' was considered to be a post-graduate subject.)		See column 1 - therefore no recommended assessment.
Outlining the potential role of research in career progression and the opportunities for research even as an undergraduate	Educational appraisal / mentoring **(See discussion paper on Mentoring)**	There is overlap of these outcomes with those in Domain 12, in relation to Career Development.

Recommendations for assessment of medical students in outcomes for the role of the doctor in the health service

Outcome	Formative Assessment	Summative Assessment
The doctor as mentor and teacher *The importance of reflecting on and analysing own experience of mentors and teachers identifying the "positive"and the "negative"and how to use this in one's own practice as a teacher of others.*	Formative assessment (with feedback from tutors and peers) of oral presentations or teamworking. This encourages students to reflect on the attributes of a good speaker/teacher and to use own feedback to improve future performance. Peer assessment of all types gives students the opportunity to develop skills in giving and receiving feedback in a constructive fashion. Continuous assessment of teaching and mentoring abilities - by tutors and peers – one of the criteria in PBL, Options and perhaps ward attachments. ***See Discussion papers on Continuous Assessment and Portfolios***	Summative assessment of ability to give patients advice and explanation via various modes e.g. patient leaflets, advice given in patient studies, written papers, OSCE stations, OSLER. One or two schools are offering SSMs on Teaching with experience of tutoring junior medical students. This should be assessed both formatively and summatively if the course is offered with some assessment *before* students formally teach their juniors. We commend this as a way to increase specific skills in a few students but would be resource intensive and to offer it more widely would be a longer term option. An OSCE station could be used to assess ability to explain / teach how to perform a procedure to a colleague.
The importance of adopting a culture of life-long learning and fostering this in the health service.		See assessments under Domain 12 'Self-learner'
The doctor as manager *Managing people and resources e.g. financial.* ***Working group suggests that management of financial matters within medical practice is a post-graduate matter except students should be able to demonstrate an awareness of the ethical and moral dimensions of resource allocation.*** ***Personal skills in management (time management, people management, documentation etc) perhaps should be in Domain 12 rather than 11 as should management of personal finances.***	Whenever possible students should receive formative feedback on continuous assessment (including team-working and other component skills) during the attachment / project as well as at the end.	See above, Healthcare Systems: NHS Organisation See comment in Outcomes column of The Doctor as a Manager. Skills in 'managing people', 'time management', 'keeping track of information', 'using health notes appropriately' and 'being appropriately equippped for clinical sessions' should all be assessed within continuous assessment (by tutors and peers) in PBL groups; ward attachments; SSMs; and other small groups and individual projects. See Discussion Paper on Continuous Assessment. Assessment of skills in managing people is often done through peer marking of the process of PBL or SSMs. Although the information may be used summatively for decisions regarding progress it is usually the formative comments rather than a 'mark' which is most useful to both students and teaching staff. Specific component skills such as writing up notes, prescriptions and requests for investigations can all be assessed in an OSLER or OSCE. Any assessment of ability within financial and resource management in the undergraduate curriculum should concentrate on assessing awareness of ethical dimensions and developing analytical skills to consider competing interests.

Recommendations for assessment of medical students in outcomes for the role of the doctor in the health service

Outcome	Formative Assessment	Summative Assessment
Doctor as a member of multi-professional team and the roles of other healthcare professionals *[The opportunity to learn with and be taught by other healthcare professionals during undergraduate education with an understanding of the benefits to be gained by all concerned including patients.] – see comment below.*		
The working group felt the above was not written as an outcome but rather a learning opportunity and as such the first half especially could not be assessed. The outcome might be better expressed as 'Understanding the benefits to the patient, family and clinician of contributing to a multi-professional approach to healthcare'.	There should be a formative element to the assessment of team-working skills. At times this formative assessment may be all that is required.	Understanding the benefits of multi-professsional care could be assessed through many modes listed above in Healthcare systems: Healthcare professions. Summative assessment of team-working skills in SSMs or with peers in small group learning etc should be performed to encourage students to develop skills in working with others. Part of that assessment could be peer assessment of contribution with formative feedback to develop skills in ability to give and receive feedback. Summative assessment of students' theoretical knowledge would be possible through queries such as 'What is a professional?' which could be a PBL topic.
Working with other healthcare professionals in the context of patient care as an undergraduate in order to better develop team working, leadership, and facilitative skills.		Since summative assessment of ability to work with other healthcare professionals will be very difficult in the undergraduate curriculum it is recommended that gaining experience of the work of other professionals is made compulsory for all students e.g. by shadowing – making attendance the assessment hurdle. The group considered possible ways of assessing mult-professional working such as a student ward where medical students could work with other healthcare professionals under supervision and continuous assessment of attitudes, knowledge and skills relevant to multiprofessional working. This would be very expensive in resources, therefore no suitable outcome measures for assessment at present.

Recommendations for assessment of medical students in outcomes for personal development

Outcome	Formative Assessment	Summative Assessment
Self awareness *The ability to conduct oneself as a reflective and accountable practitioner including seeking out sources of informed criticism and valuing, reflecting and responding to them appropriately. Enquiring into own competence and evaluating own capabilities and personal effectiveness.*	Educational appraisal / mentoring based on information provided by the student e.g. academic record, self and peer assessments, skills assessments e.g. team-working. (*See discussion paper on Mentoring).* Whenever possible students should receive formative feedback on continuous assessment during the attachment / project a well as at the end. Whenever possible students working in groups should be encouraged to seek and offer criticism of one another in ways which are as non-threatening and constructive as possible. Students will require support and assistance from staff to develop this way of working together.	Meeting with educational mentor the required number of times. Continuous assessment by tutors in PBL groups, ward attachments, SSMs and other small groups. *The working group strongly recommends that assessment of Personal & Professional Development is made frequently, tracked throughout the course and described as a hurdle separate from academic ability to give greater weight to this aspect of a students' profile of abilities, and to ensure difficulties are recognised early in a student's career and help sought.* *It could also be the principal source of information to the Fitness to Practise Committee.* *Apart from assessments within Personal Development, this track could also include assessment of students' adherence to the Students Ethics Contract/Code which most Scottish medical schools now have, and some aspects of communication skills.* **(See discussion paper on *Fitness to Practise procedures*).** Peer assessment of outcomes for Personal Development. These are possible in situations where tutors are also performing continuous assessment. *See Discussion paper 1 for more information* **Self-appraisal** Portfolio learning and review allows students to reflect on one's learning experiences, evaluate one's competence and effectiveness and demonstrate a response to this information. When these skills are demonstrated by reflective essays they can be summatively assessed. As with Educational Mentoring and Continuous Assessment, Portfolio Learning and Review can assess several outcomes in Personal Development. (*See discussion paper on Portfolios)* Short reflective accounts/assessment of some learning activities: *Role played in an SSM group* *Evaluation of individual SSM* *Reports on interactions with patients* *Self-marking of assignments or group work*

Recommendations for assessment of medical students in outcomes for personal development

Outcome	Formative Assessment	Summative Assessment
Self learning *Searching & selecting resources*	Assignments designed to test library skills and literature searches early in medical course e.g. library skills, computer skills.	Specific assignments designed to test independent learning and use of resources e.g. library skills, computer skills, electronic searches. Quality of medline search strategies and references sourced could be assessed repeatedly to improve students' skills.
Making use of available technical aids	Students should be encouraged to use CAL for independent learning and self-assessment. The latter gives students formative feedback at least about their preparedness within a topic.	Some assignments may require to be presented in a specific media to encourage and test students' use of technology e.g. posters, web pages, video and oral presentations using overheads and powerpoint. Marks should be explicitly awarded for presentation skills.
Employing appropriate and effective study skills		All assignments and examinations assess in part students' ability to learn effectively, be self-directed & use appropriate resources and references. Some assignments e.g. in PBL and SSMs are specifically designed to test these. One of the Scottish medical schools sets a PBL task (MILE) specifically to develop and test skills for self-directed learning
	Whenever possible students should receive formative feedback on continuous assessment during the attachment or project as well as at the end.	Continuous assessment of SSMs, ward attachments and PBL will take into account ability to be self-directed and use appropriate learning strategies and resources. This assessment can be done by tutors, peers and self and often a combination of all three. *See discussion paper on continuous assessment.*
Recognising limitations of current understanding and capabilities	Educational mentoring and appraisal. Students would have an opportunity to bring information on their performance including own assessments of abilities and limitations. *(See discussion paper on educational mentoring)*	Portfolio review by students could include reflection on their skills and aptitude for self-learning and limits of their current abilities and understanding. Plans for professional development should take into consideration student's own learning styles.
Setting appropriate & challenging learning goals that remain realistic	Students perform a 'Needs assessment' within community health attachments in Aberdeen. This model requires students to review their current understanding of the topics and set their own learning goals at the outset of the attachment – similar to Personal Learning Contracts – which may be increasingly appropriate for the more senior students. Within Personal Development students may be asked to set learning goals or describe personal plans for a term – this will require feedback from a tutor or mentor.	
Selecting learning strategies that take account of personal learning preferences	One of the Scottish medical schools sets a PBL task (MILE) in Year 1, specifically to develop understanding of own personal learning styles and test skills for self-directed learning.	

Recommendations for assessment of medical students in outcomes for personal development

Outcome	Formative Assessment	Summative Assessment
Self care *Recognition of the pressures of a demanding professional life on health, well-being and relationships with others and the need to maintain a balance between personal, professional and social goals and activities.* *Evidence of attention to lifestyle, diet, exercise and relaxation.* *Making use of available help and advice in stressful circumstances.*	Educational mentoring could offer support and formative assessment within all outcomes in Self-care*. *(See discussion paper on Mentoring)* Medical review This is a new and untested suggestion for further discussion and investigation, based on the clinical model of GPs offering medical review and advice on risk factors to their patients. It would be a confidential consultation as usual performed by own GP or occupational health doctor and performed perhaps twice or thrice in the 5year course. If it were a requirement of the course it would probably have cost implications.	No suitable summative assessment of the outcomes other than the small part contributed by appropriate knowledge (see below) and the requirement to attend educational mentoring and medical review sessions as dictated by each school. Formative assessment through educational mentoring and possibly medical review was thought to be much more important than summative assessment for this group of outcomes. However poor performance on attachments or in SSMs etc may indicate that a student has difficulty in some of these outcomes. In this way the summative continuous assessment could in part be a measure of a student's quality of self-care.
Recognition of the hazards of self-medication or substance abuse in dealing with stress. ***The working group agreed that within this outcome mention should be made of 'Occupational hazards such as needlestick injury'***	Formative assessment of clinical practice and knowledge of occupational risks should be part of the learning experience in clinical skills laboratories.	Knowledge assessments about effects of the abuse of drugs and alcohol within 'systems', 'medicine and the community' or 'sociology' Assessment of clinical skills and knowledge of preventive measures and risk of occupational hazards currently occurs within OSCEs and written papers.

Recommendations for assessment of medical students in outcomes for personal development

Outcome	Formative Assessment	Summative Assessment
Career choice *Identify short and long-term career and personal plans and aspirations and work towards these by establishing realistic development plans involving relevant activities.* This outcome could include: Knowledge of the structure of the medical profession in the UK – relevant to career choices.	**Educational mentoring including annual assessment of CV and appraisal of strengths and weaknesses as presented by student following own reflections. Depending on needs of student, mentoring could include discussion of their career aspirations, helping student find further information and asking student for evidence that this would suit their abilities and priorities.** *(See discussion paper on educational mentoring)*	Formative assessment in the form of Educational mentoring was again considered the most appropriate form of assessment.
Participate fully in the life of the professional community and make use of professional and other networks of all types.		The achievement and assessment of much of this outcome was considered to be a post-graduate issue.
Motivation and Commitment *Recognising key personal motivating factors and their importance in sustaining a high level of motivation.* *Demonstrating dedication to one's chosen career pathway through adherence to the codes of conduct and behaviour expected of undergraduate medical students and doctors and an acceptance of any limitations that might be associated with them.*	Educational mentoring *(See discussion paper on educational mentoring)* Whenever possible students should receive formative feedback on continuous assessment during the attachment / project as well as at the end.	Portfolio cases and review can assess reflective practice, including recognising key personal motivating factors. Significant overlap with 'Duties of a Doctor' in Domain 11. Continuous assessment in PBL groups; ward attachments; SSMs; and other small groups can include the criteria motivation and commitment. (See discussion paper on Fitness to Practise procedures) This type of assessment can be done by tutors, peers and self.

The working group recommends that Personal Organisational Skills e.g. time management, documentation skills, management of own tools and resources be part of Personal Development rather than Domain 11 under the Doctor as a Manager.
It is also noted that 'Adaptability' and 'Coping with Change', apparently important personal/professional attributes, are also missing from Domain 12.

THE USE OF PORTFOLIOS IN ASSESSMENT

The recommendations of the working group reporting on assessment of domains 11 and 12 include several references to the use of portfolios. The outcomes where it is felt portfolios could be used include: understanding the role of other Healthcare Professionals; the relationships of primary, secondary and tertiary care; "Duties of a Doctor", self-awareness and professional development. The working group felt that a portfolio was particularly useful in enabling a student to demonstrate that they had developed skills in less definable areas such as those listed above and which would otherwise be difficult to assess in a formal examination.

The contents of portfolios vary between medical schools and this may create confusion about the term. Judy McKimm from the Imperial College School of Medicine, London reported (January 2001)[1] on the diversity of practice when medical schools were asked to describe their use of portfolios in their undergraduate course. Descriptions varied from tick-box records of clinical skills acquired, through collections of case reports, to detailed documents including reflective writing relating to the learning experience from particular cases. Our working group used the term portfolio to describe a collection of clinical material and project work. The work forms a broad platform which demonstrates a student's level of development and gives an opportunity for reflective insight. For example, consideration of the role of other healthcare professionals could be done with reference to a specific case where input from members of the multi-disciplinary team was particularly pertinent. This allows the student to appreciate the relevance of what might seem like more peripheral experience when compared with areas of personal knowledge and abilities. It also reflects the way in which many doctors appear to learn i.e. by relating information learned to particular clinical cases.

In Dundee Medical School the portfolio represents the mainstay of the final year assessment. Students present much of their phase III (yrs 4 and 5) course work and include at the front of the portfolio a series of reflective accounts on each of the 12 outcomes describing how particular cases and experiences (including the elective) contributed to their development as a practitioner. The portfolio is read by two examiners and forms the basis for a viva with the student. During the interview areas of excellence or concern can be raised by the examiners for more detailed discussion. Evaluation work is being done at present to determine the reliability of an assessment tool for marking the reflective accounts in domains 11 and 12.

It is important to recognise the current limitations of using a portfolio in assessment. There is not yet sufficient evidence to comment on its reliability and/or validity compared with, for example, the multiple choice question paper. However as greater refinement is made in assessing the attitudes and skills of medical students, the relevance of portfolio assessment methods should improve.

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[1] Using Portfolios in Medical Education, Preparedness to Practice project, Imperial College School of Medicine, Judy McKimm, January 2001.

EDUCATIONAL MENTORING AND APPRAISAL

Background information

Mentoring within the medical profession and even within the undergraduate curriculum has occurred in one form or another for generations. The term is derived from the relationship Mentor had with Telemachus. Mentor took on the responsibilities of his absent friend by supporting and guiding his son. This activity has subsequently been described as teaching, supporting and blessing the protégé (Levinson 1976, 1978).

Within many professions seniors have sought to bestow such mentoring on a chosen few with the view to grooming promising protégés to follow in their footsteps. This form of mentoring is seen to be available only to the 'best', is open to abuse by both seniors and trainees, and leaves many in training without support. At the other extreme is mentoring for only those students who are sick or unable to cope. This may have the disadvantage of discouraging students contacting staff members for support (Taylor 1980).

Drivers for a personal tutor system

A consequence of the modern system of healthcare based on specialised units is that students rotate through many brief attachments with more tutors involved in their clinical teaching. The opportunity to develop mentoring relationships with a few senior clinical teachers has been lost.

Tomorrow's Doctors (GMC 1993) explicitly seeks to encourage students to direct their own learning and provides fewer staff-student contact hours. Both these along with larger classes leave many students feeling isolated and anonymous.

Medical students are no doubt under stress due to anxieties about academic and examination performance and coping with the workload. (Firth 1986; Thurber 1989; Parkerson et al 1990; Sheehan et al.,1990; Wolf 1991; and Guthrie et al., 1995). As a result of these findings the BMA in 1992 urged medical schools to provide students with personal as well as academic support.

Information on the number of students who also have personal problems which compound their difficulties and stress are contradictory from 7 – 45%. (Dowell1989, Malik 2000).

Other authors have encouraged faculties to 'provide support and guidance to enhance the personal development of medical students' (Muller 1984)

Current provision

There seems to be general acceptance of the desirability of having some form of personal tutor system for undergraduate medical students in the UK as shown by the Deans' responses to a survey conducted by Coles in 1993. Thirty-one medical deans were asked about the provision of a personal tutor system in their schools. Of the 29 who replied 83% reported that students were allocated a personal tutor, with 100% having access to counselling, 80% receiving formal career advice, 66% receiving study skills advice and 38% being formally taught how to cope with the stresses of medicine.

However there is a lack of detailed information on the support provided which makes it difficult to be sure exactly how the schemes each contributed to the students' personal and professional development.

All medical schools represented in the working group have student support systems. The schemes vary but most concentrate on the psychosocial welfare of the student and being available for academic support and advocacy where necessary. See Appendix 2 for information on some of these.

Is a personal tutoring system effective?

There is little detailed information and evaluation of mentoring in undergraduate medical education in the UK. In the London Hospital Medical College personal tutors were asked to oversee the general educational development and offer psychological and social support to their group of students. Some of the activities described include: topic teaching seminars, bedside teaching, regular review of progress on clinical firms, advice about examinations and careers advice. However only 30% of tutors and 52% of students found it successful or highly successful (Cottrell 1994).

In Dundee tutors were asked to act as a point of contact for academic staff, advise on SSMs and general academic problems, (especially before remedial studies and resits) and direct students to sources of support for financial, emotional, health problems. Again, reported satisfaction with the scheme revealed only 18% of students and 30% of staff thought it successful (Malik 2000).

It is useful to note that student satisfaction in both studies was positively correlated to regular though not necessarily frequent meetings; the tutor making initial contact and 'chasing' the student to attend meetings and having meetings that addressed educational/academic needs as well as social activities.

Finding suitable outcome measures with which to evaluate personal tutor systems is difficult. There are however studies which have demonstrated how a personal tutor system may reduce attrition (Thurber 1989), improve students' sense of isolation and anonymity (Woessner 1998), and be particularly successful in supporting first year and overseas students (Woessner 2000).

Cottrell reported that 9% of students involved in the London Hospital study had personal problems which they felt they could not consult their tutor or another member of Faculty with. Malik reports that approximately 50% of students felt they had personal problems interfering with their academic studies but which they felt unable to discuss with staff members. Students comment that a good relationship with their tutor is the most important factor in determining whether or not they feel able to share academic and personal problems. Students' satisfaction with their tutoring increased if they shared social activities with their tutor as well as having academically focussed meetings. There is also evidence to encourage the view that it is supportive behaviour rather than innate personality traits which are important in determining the success of mentoring. This would suggest that training for mentors may improve the outcomes (Alleman 1984).

The tutors commented that they required very clear aims for the whole process, a purpose or objectives for each meeting, and accurate information on the student's performance to help them make the meetings valuable (Cottrell 1998). Tutors however also recognise that personal tutoring gives them a better understanding of the curriculum and students' perspective of university life and is often enjoyable (Woessner1998).

Relevance to Future Professional Practice
The term mentoring is also used to describe appraisals which may include an element of judgement about quality of service or abilities. The revalidation or reaccreditation interviews proposed by the GMC fall into this category. Their prime function is to ensure that performance and progress are optimal and that those with difficulties are picked up and dealt with appropriately.

Current medical students are likely to have to submit to a revalidation programme after graduation and therefore should benefit from exposure to similar opportunities, in the undergraduate curriculum, to gather information on their own performance and carry out self-assessments and personal planning.

Appraisal performed in an atmosphere of judgement inhibits students' sharing honest reflections about themselves and their experiences and this could impact adversely on the success of such a scheme to support personal and professional development. There are many other modes of assessing Personal Development and some of these are described elsewhere in this report. Educational mentoring and appraisal in the undergraduate curriculum should therefore concentrate on supporting students' personal and professional development and providing formative feedback to them.

Bulstrode et al. (2000) describes how Rosslynn Freeman (1998) has demonstrated within General Practice that mentoring can encourage reflective practice and thus develop self-directed learning and personal development. She has relied on the GP mentor as the role model and teacher for the trainees, as well as the facilitator for reflective practice. But with GPs of similar seniority she relies principally on colleagues acting as facilitators only for reflection. She uses the Egan model of reflective practice which encourages the mentee to consider the following questions:
- look at the present situation (am I in achieving my educational and personal goals?)
- imagine the preferred position (where do I wish to be at the end of term/session?)
- reflect on how to get from one to the other (how do I intend to achieve this?)

Freeman's model could be thought of as being motivational rather than judgemental as in the GMC Revalidation proposals.

Conclusions

Mentoring for medical students is not a new process. Its functions have in the past been informally taken on by tutors in clinical attachments, but changes in the curriculum have compromised this activity and not all students were able to avail themselves of this informal system.

There is a widely perceived need for medical students to receive individual tutoring for
- Psychosocial difficulties
- Academic support
- Personal and professional development

Many medical schools have some form of process in place but these usually address only some of these issues and information on their effectiveness is rarely available.

There is little evidence that mentoring on any model influences students' outcomes in skills, knowledge or attitudes. The effect of current schemes on students' personal development is unknown and we were unable to find accounts of undergraduate mentoring based on appraisal.

There is evidence that students and staff are more satisfied by the process when the meetings are regular, arranged by the tutor and include social as well as academically focussed activities.

Staff often enjoy the opportunity to understand the curriculum in more detail and develop closer professional relationships with their students.

Current planning suggests that those in postgraduate training and qualified practitioners will be subjected to an appraisal process akin to mentoring throughout their professional lives.

A personal tutoring or mentoring system is expensive of staff time.

RECOMMENDATIONS ON MENTORING

1. All medical schools should have in place a system that provides psychosocial support, gives students the opportunity to seek help with academic matters and provides a point of contact between academic staff and the student to ensure deficits revealed in assessment are discussed and acted upon.

2. Mentoring in the undergraduate curriculum should concentrate on supporting the personal development of the students and provide formative feedback for individual students. The summative assessment should depend only on the fact that the student has met with the tutor the predetermined number of times per academic session. The only exceptions would be in cases where mentors/tutors become aware of facts that suggest patients may be at immediate and serious risk from the student. Many medical student support systems operate under this code of practice currently.

3. We strongly recommend that pilot schemes and further study be undertaken to look at the effects of formal educational mentoring for all students in a group e.g. all on course; all junior students; or all senior students. These should be regular meetings with a named tutor/advisor/mentor with the aim of providing formative assessment of the professional development of their mentees. The meetings should not be seen as only for the student with problems or illness but as a means of supporting the development of excellent abilities and attributes in all students. They could also embrace the functions of the current student support systems.

4. There are good reasons to suggest that educational mentoring should be based on motivational appraisal such as the Egan method but other specific models should also be investigated. The advantages of motivation appraisal are it:
   • gives structure and meaning to the meetings
   • encourages the student to take responsibility for own professional development
   • allows review of performance in attitudes, skills and knowledge
   • gives students an opportunity to identify their own needs (general e.g. time management and specific e.g. particular clinical skills or information on a career) to achieve their own goals
   • triggers discussion of difficulties, perceived by either staff or student, within context
   • provides a route for formative assessment of a student's personal and professional development while removing the mentor from the role of summative assessor
   • allows the mentor to be involved in social activities with the mentee without conflict of roles

5. If mentoring is based on appraisal students could be encouraged to take to the meeting some of the following as sources of information about their performance and future aims:
   • Academic records
   • Curriculum vitae
   • Personal plans
   • Feedback from assessments by tutors, peers and self
   • Critical incident analyses relevant to own practice
   • Reflections on career path

6. There are practical reasons why appraisal is best performed by one or two staff members throughout one student's undergraduate career but informal mentoring should be encouraged in clinical attachments where lead tutors could fulfil this role while giving formative feedback on recent performance and attitudes. This should be developed regardless of having more formal mentoring and appraisal.

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CONTINUOUS ASSESSMENT IN PERSONAL & PROFESSIONAL DEVELOPMENT AND FITNESS TO PRACTISE PROCEDURES

Introduction

Assessment of medical students' knowledge is now being undertaken using a variety of techniques, including modified essay questions (MEQs), extended matching lists (EMLs), as well as the more conventional multiple choice questionnaires (MCQs) and short note questions. Assessment of clinical skills has also changed and is undertaken using the objective structured clinical examination (OSCE), and using the modified long case examination or objective structured long examination record (OSLER). It is widely regarded that regular examination during the undergraduate curriculum provides an incentive for continued learning as well as helping to identify the "at risk student" who needs more support during the undergraduate course [1].

While assessment of some of the outcomes in Domains 11 & 12 of the Scottish Deans' Medical Curriculum Group Foundation for Competence and Relative Reflective Practitioners document can be assessed in the above ways, a variety of the outcomes are more difficult to assess using the above techniques. These include:

1. The duties of the doctor as defined by the General Medical Council
2. Self-awareness
3. Self-learning
4. Self-care
5. Motivation and commitment

Nevertheless, many of these attributes are equally as important as the knowledge base and the working group felt that regular assessment of these parameters during the undergraduate course was equally as important [2]. To date attitudes and attributes relating to professional practice often involve a relatively small subjective element of assessment and may not be sufficient to have a detrimental effect on the student's ability to progress through the curriculum. The identification of repeated poor performance in areas of personal and professional development should raise questions as to the student's general ability. One advantage of the new curricula is that the students are seen regularly by many different tutors. If similar concerns in these outcomes are seen in an individual student when reviewed by many different assessors this could provide a robust technique for identification of potential problem students. It may therefore be beneficial for Medical Schools to track these cumulative assessments of professional behaviour so that support can be offered to appropriate students where necessary.

Methods of Assessment

Review of the policies employed across the Scottish Medical Schools demonstrated that some schools encourage the medical students to sign a document at the beginning of their medical school career, which delineates many of the factors covered by professional development. Although this is not a method of assessment, this does encourage the medical students to take responsibility for their own professional development, and it has the advantage that it reinforces the importance of these aspects of the curriculum at an early stage in their career.

The advantage of regular assessment throughout the medical student's career enables the student to be reviewed formatively by tutors and also by student peers. Using the examples of assessment of motivation, commitment, planning and facilitation, doing one's share and working as a team, the students have the potential to provide guides for formative assessment of one another. While maintenance of anonymity is obviously important, the tutor's view of student interactions could reinforce the importance of these outcomes and this could be assessed summatively. However, assessment of the student's ability to undertake self-learning, including enhancement of IT skills, sorting literature searches and student's ability to be aware of their own limitation, may perhaps be better reviewed by the student and tutor together rather than by the peer group. Nevertheless the importance of personal development as a medical student and as a precedent for future career aspirations led the working group to consider that summative assessment would be appropriate for many of the outcomes delineated in the Scottish Deans' document. Review of current policy across the Medical Schools in Scotland demonstrated that a grid system is most widely used (see appendix). These delineate candidates' abilities according to specific outcomes, but a wide variety of grades are presently used for these assessments. The Working Group did express some concerns about the use of a two-grade system (satisfactory/unsatisfactory) and felt that three or four categories would not be inappropriate to cover the breadth of professional development. It was felt that not only did this provide the assessor with a range with which to gauge the student's ability, but also enables the student to see a progression during the course of their medical school career. A similar situation operates in a variety of medical schools within the United Kingdom and also a similar process is undertaken for students of veterinary medicine. Interestingly, law faculty students attached to solicitors' practices for the latter part of their training carry a log book in which professional development is assessed on a quarterly basis along similar guidelines.

Factors which are covered in this grid structure include attendance, reliability and personal organisation, relationships with colleagues (team work, respect/consideration, time management etc.), self-learning (relating to new material assimilation), questioning mind (understanding limits of one's own learning), commitment to an ethical code (honesty, trust worthiness), appearance, empathy with patients, etc. as well as clinical skills, communication with patients, staff and assessment of clinical presentation ability. This grid structure also adapts itself well to assessment of the student's ability to undertake some academic aspects of the medical school training providing a useful adjunct to any other assessment system.

The Importance of Self-Care

The working group felt that the importance of ensuring a high standard of care in looking after patients should also be extended to the management of the health of the individual student during their medical school career, and that this is not undertaken at the present time. However, with a not insignificant incidence of stress, dependency and psychiatric disease amongst the medical profession, setting a precedent of regular health assessment during undergraduate training would provide a good basis for a similar standard of self-care during the postgraduate development. An analogy was drawn with airline pilots, where the importance of passenger safety demands an annual check-up is compulsory for maintenance of their contract with the airline. A similar process might be useful for review once or twice during the medical student's career, not only to draw attention to modification of lifestyle, diet, etc. This also stresses the importance of the doctor's own health care not only as an example to patients, but reinforces their responsibilities and emphasises the potential consequences of their own poor health in correct patient management.

What To Do With The Persistently Unreliable Student

The working group felt that the robustness of the assessment of professional development depended on the Medical Faculty having the ability to take action dependent on the student's results of such a process of review. It was also felt that this process should be seen to be reliable and one advantage of having many assessors reviewing individual students is to enhance the confidence in the results of any individual assessment process. Whilst the individual system may vary between Medical Schools, it was felt that an appropriate person (Year Co-ordinator, Education Subdean) would be an appropriate starting point for review with the medical student about their activity in an attempt to identify particular problems. It was generally felt that the importance of professional development, not only as an undergraduate but also at a postgraduate level, should be stressed from the beginning of the undergraduate curriculum. As such the working group felt that it would be entirely appropriate for students, producing a repeatedly unsatisfactory performance in their professional development, to be reviewed by a committee that would examine fitness to practise issues. While this could be part of a progress committee and may be made up of a similar membership it was felt that the importance of these issues should be reviewed separately from the academic development. Indeed the Medical Faculties may wish to take up the sanction of enforcing the student to have to re-sit a full year with appropriate assistance and guidance prior to subsequent review.

Cost Implications

Good assessment is costly, not only in terms of the assessor's time but also in terms of financial resources. In order to have confidence in the results of any continuous assessment of professional development it would be necessary to train and probably to continually re-train assessors to ensure consistency [3]. Nevertheless, the reliability of these assessments, especially if sanctions are to be taken against the failing student, must not be put in question. The working group felt that it was appropriate to acknowledge that there may well be significant resource implications, and that even in the presence of financial limitations that the importance of these outcomes necessitated that it would be inappropriate if they were not addressed. Ensuring that each student realises the importance of professional and personal development, for the duration of the undergraduate curriculum, is the responsibility of the medical school. However the standards that are set at this stage are not limited to the first five years of a medical career, they remain in place throughout a doctor's life. The potential implications if these issues are not addressed properly at this stage could be serious for members of the public in the future.

SUMMARY OF RECOMMENDATIONS FOR CONTINUOUS ASSESSMENT OF PERSONAL AND PROFESSIONAL DEVELOPMENT

1. Professional development should be assessed throughout the undergraduate medical school curriculum.
2. The student should sign a contract with the University confirming that they will attain high professional standards at the beginning of their course.
3. Professional development should be assessed at suitable opportunities throughout the course.
4. At least part of the assessment between tutor and student should be summative.

5. Peer review in a formative manner might be useful for identifying "at risk students" and this might be considered.
6. Medical Schools should ensure that repeatedly poor assessments in professional development should be subject to review by the Faculty.
7. The instigation of high awareness of self-care in the undergraduate curriculum could encourage similar standards at a postgraduate level.
8. Funds for training and retraining should be ring fenced to ensure consistency and robustness of assessment process.

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CONCLUSIONS AND IMPLEMENTATION

Scottish Medical Schools already describe and assess outcomes relevant to Domains 11 and 12. This group recognises that there is overlap of the outcomes in Domains 11 and 12 with others, especially in Domain 9. Outcomes relevant to self-learning, good documentation and working well with others which we felt formed part of Personal Development are also to be found in other Domains. Such overlaps and differences in descriptions of Domains are inevitable and we have only indicated significant comments in our Tables of Recommended Assessments earlier in this report.

Modes of assessment common to several schools within Domains 11 and 12 include :
− MCQs, MEQs, OSCEs and Case Studies to assess knowledge
− continuous assessment, OSCEs and portfolio reflective essays to assess professional attitudes and behaviour
− in-course assignments, peer assessment and projects to assess research, self-learning and team-working skills
− reflective essays, learning needs assessments, writing curriculum vitae to assess self-awareness and insights relevant to career choice
− oral presentations, peer assessment of group work and SSMs on teaching to assess the student as a mentor and manager

Our recommendations have been based on current assessment in the Scottish medical schools, relevant assessment in other undergraduate vocational courses, the processes for selection and on-going assessment in business and the forces and formative assessment within postgraduate medical education. We have recommended three fairly new approaches as the main thrust of our assessment strategy for The Doctor as the Professional:

1. Tracked assessment of personal and professional development based on tutors' attachment assessments, peer and tutors' assessments of team-work or contribution to product, and specific skills assessments e.g. oral presentations. If necessary these assessments could inform the Fitness to Practise procedures.

2. Portfolio case studies and reflective writing. This has the potential to assess the student's understanding of some of the multi-faceted aspects of medical practice e.g. multi-disciplinary working, ethical decision making, resource management, the role of self-directed learning and research and the interplay between clinical experiences and personal health, relationships and career choice.

3. Educational mentoring, based on regular meetings with a tutor who will aim to assist the student's personal and professional development through motivational appraisal. The student might bring some of the following personal information to the appraisal: the CV, academic record, feedback from tutors, peers, self and patients on academic work and personal and professional development, personal plans, learning needs assessments and critical incident analyses.

Each of these methods apparently assesses many specific outcomes but we would recommend that further research on their validity and reliability is assessed in pilot studies.

Assessment of many of the outcomes in Domains 11 and 12 will be applied in an integrated fashion i.e. professional conduct and motivation can only be assessed within the context of observed clinical or project work and not alone. Many of the outcomes will be assessed together e.g. lateness at clinics may be a marker for poor motivation and/or poor organisational skills.

Compensation between academic content and personal/professional development should no longer be allowed if concerns about students' suitability for medical practice are to be picked up and responded to quickly. Thus separate tracking of personal and professional development is suggested.

The table of recommended assessments indicates the importance of continuous and formative assessments in Domains 11 and 12. The latter is the principal mode for some outcomes such as Career Choice. Feedback would be available from the many assessors involved e.g. the attachment clinical tutors, SSM tutors, peers, patients, and examiners of portfolio entries and OSCEs. The mentor would also be able to provide more general feedback based on the overall picture of the student's performance and goals.

The design of the assessments especially within Personal and Professional Development will require central coordination if a true assessment of the student is to be made from component assessments throughout the five years e.g. from attachments, group-working and Portfolio entries. There will however be scope for each component assessment to address specific outcomes of professional practice relevant to that module.

The recommendations on continuous assessment, portfolios and educational mentoring are all tempered by the recognition that each requires significant resources. Staff development is necessary to ensure that teachers understand the purpose of these systems and how to make objective and fair assessments and give feedback. These modes of assessment also require tutors to find more time to gather information about students on attachment and offer feedback on their performance; mark several pieces of written work for the portfolio, often including reflective writing where the tutor needs to be familiar with the whole portfolio; and to offer appraisal and mentoring to a few students perhaps twice in the academic year. These concerns about tutors' time emphasises the need to introduce these modes of assessment cautiously and enquiringly.

We have not always made specific recommendations about when the assessments should be performed. This will depend on when the outcomes should be achieved within each medical school. For other outcomes, especially in Personal Development, the outcomes will be repeatedly assessed throughout the course, either for emphasis or to assess progression. The Scottish medical schools are currently working independently at defining the criteria and standards for each of the outcomes and examples of these are given elsewhere in this report. Further collaboration might make it possible to define common minimum standards for each stage of the medical courses.

The documents in Appendix 1 give information on Portfolios currently in use in Scottish medical schools including:

- **Information to examiners and students on the Dundee Portfolio**

- **A brief guide to the Edinburgh Portfolio**
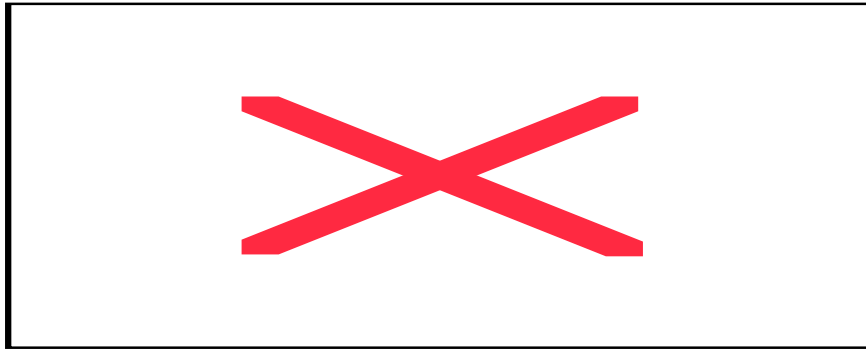
UNIVERSITY OF DUNDEE
School of Medicine

**Final Year Assessment
Notes to Examiners and Students**

May/June 2001

Purpose of the Assessment

The purpose of the final year assessment is to determine, in line with the GMC guidelines, that the student is ready to proceed to the Pre-registration House Officer (PRHO) year.

Components of Phase 3 Assessment

Phase 3 spans Year 4 and 5 of the curriculum during which time the following assessments take place.

Year 4 Examination

This tests the students' core knowledge, skills and attitudes following ten blocks of four-week subject-based clinical attachments. This examination consists of:

• Completion of Year 4 Portfolio requirements
• Completion of 75% of Practical Procedures in Record of Achievement
• OSCE – Objective Structured Clinical Examination
• CRQ – Constructed Response Questions
• EMI – Extended Matching Item Questions

Students must have successfully completed this core assessment before proceeding to the Year 5 examinations.

Year 5 Examinations

Before being eligible to sit the Year 5 examinations, students must have achieved the following:

• Completed all seven blocks of Year 5
• Submitted a complete portfolio according to the required criteria by the due date (Friday 11th May 2001)

Eligible students will then take the Year 5 Assessments as follows:

1. Portfolio Review and Assessment (May 22, 23, 24 2001)

Students who perform to a satisfactory standard in this assessment will be granted exemption from the Final Assessment. Students who perform to the highest level will be eligible for a distinction assessment – for further details, see below.

2. Final Assessment (June 25, 26 2001)

For non-exempt students, there will be the following assessment:

• An Objective Structured Clinical Examination
• An Oral Assessment

On the basis of these assessments, students will be given pass or fail grades.
During this diet of Final Assessments, possible distinction students will undertake a problem solving exercise and an oral examination.

3. All students will also complete a compulsory PRHO preparation block before being allowed to graduate.

Details of the conduct of these assessments are given below.

Assessment Against the Curriculum Outcomes

An essential feature of the Year 5 Assessments is that the criteria against which students are assessed are the twelve curriculum outcomes.

These are summarised below and set out in greater detail in the Medical School's Strategic Teaching Document – 'The Dundee Curriculum' – pp8-11 and Appendix 1 of these notes.

The twelve curriculum outcomes are:

Competence in:

1 clinical skills
2 practical procedures
3 patient investigation
4 patient management
5 health promotion and disease prevention

6   communication skills
7   retrieving and handling information

An approach to practice which is based on:

8   understanding of basic, clinical and social sciences
9   appropriate attitudes, ethical understanding and legal responsibilities
10   appropriate decision making skills, clinical reasoning and judgement

A professional approach involving;

11   appreciation of the role of the doctor
12   aptitude for personal development

Year 5 Programme of Work
All students must complete, as directed by the Medical School Office, all of their seven blocks in the Final Year consisting of:

- two PRHO Apprenticeship Blocks
- one GP Special Study Module
- two Clinical Special Study Modules
- two Theme-Based Special Study Modules

Some students will have been directed to undertake two core revision modules, replacing one clinical and one theme SSM.

Some students will have undertaken an extended GP SSM. They are then required only to complete *one* Theme and *one* Clinical SSM.

At the end of all of the blocks, an outcome assessment form is completed by the Supervising Tutor which is marked against the twelve curriculum outcomes. Students are given a final grade for the GP SSM and extended GP SSM. These outcome assessment forms are included in the students' portfolios and summarised in the Portfolio Assessment and Summary (PAS) Sheet.

Conduct of the Year 5 Assessments

Portfolio Review and Assessment (May 22, 23, 24 2001)
During Phase 3, all students prepare a portfolio of their work which describes how they have progressed to achieve the twelve curriculum outcomes.

The Portfolio is received on the due date and checked by the Medical School Office staff for completeness and a receipt issued. The Portfolio should be submitted in the format set out in the Phase 3 – Year 5 Handbook (pp 12-15) as follows (see appendix 2).

- It should be in an A4 binder
- There should be an index to the required material
- This should be followed by 12 pages, one directed to each of the outcomes, summarising the experience and personal progress relevant to that particular outcome and the supporting evidence to be found within the portfolio
- Patient Presentations from Year 4 (10)
- Case Discussions from Year 5 (7)
- Year 4 Assignment with report and assessment form
- Record of Achievement
- GP SSM – Outcome Assessment form
- Clinical SSMs – Outcome assessment forms and any written material
- Theme SSMs – Outcome assessment forms and any written material
- PRHO Apprenticeship learning plans and assessment forms [Medicine and Surgery]
- Elective report and assessment form
- Any additional material illustrating progress towards achieving the curriculum outcomes

Details of the pre-marking arrangements for the separate components of the Portfolio are given in Appendix 3.

A small number of students who started Phase 3 in an earlier year will have completed a greater number of patient presentations (15) and an earlier version of the Record of Achievement. In addition, in previous years the

outcomes were numbered in a different order. The PAS sheet will identify students to whom those differences apply.

Review of the Portfolio

Portfolios will be available for review by the examiners in the Clinical Skills Centre, Ninewells Hospital & Medical School between Monday 14th May and Monday 21st May 2001.

Examiners are advised to do the following:

▪ Check that the portfolio and portfolio assessment (PAS) sheet correspond to your allocated student.
▪ Review the PAS sheet and outcome assessment forms for each of the seven blocks in Year 5 which have been already marked against the curriculum outcomes.
▪ Review the grades which have been awarded for the case discussions which have been marked against selected outcomes, and the overall grades for the elective report and assignment which have not been marked against outcomes.
▪ Read the twelve outcome summary sheets which should be found at the front of the portfolio – These should summarise the students' own view of progress towards the outcomes and how it is supported by evidence in the portfolio.
▪ Read components of the portfolio as required to reach a view of the standard of the submitted work.
▪ Taking all factors into consideration award overall grades for each of the 12 outcomes according to the following criteria:

Grade A – Excellent	**Grade E** – Marginal fail
Grade B – Very good	**Grade F** – Definite fail
Grade C – Satisfactory	**Grade G** – Bad fail
Grade D – Just adequate (borderline pass)	

Record of Achievement

The examiners are asked to assess the completeness of this Record of Achievement, and to note any strengths/weaknesses in the quality of the descriptions of the investigations or management procedures, using section 3 of the portfolio assessment and summary (PAS) sheet.

Outcome 2 – Practical Procedures
Of the total of 27 practical procedures listed on pages 12-18 of the Record of Achievement, please record the number signed as performed against outcome 2 in the 'R of A' column of the portfolio assessment and summary (PAS) sheet. In some cases students may have included reasons why it has not been possible to carry out the procedure, and what alternative means they have used to gain understanding of that procedure (eg lumbar puncture).

Outcome 3 - Patient Investigation
Of the 19 investigations listed on pages 19-22 of the Record of Achievement, please note the total number signed off by a member of staff against outcome 3 in the 'R of A' column of the PAS sheet. Please note any particular strength or weaknesses identified from the descriptions of the investigations, in section 3 of the PAS sheet.

Outcome 4 - Patient Management
Of the 36 treatments listed on pages 23-31 of the Record of Achievement, please note the total signed off by a staff member against outcome 4 in the 'R of A' column of the PAS sheet. The requirement to have seen the "use of supportive psychotherapy" (pg 25) was removed during the year as an unrealistic goal for all students to have achieved. As before, any strengths or weaknesses associated with the descriptions of the treatments should be noted in section 3 of the PAS sheet.

Outcome 9 –   Appropriate Attitudes, Ethical Understanding and Legal Responsibilities
Of the 3 items listed under this heading on pages 32 & 33 on the Record of Achievement please record the number completed against outcome 9 in the 'R of A' column of the PAS sheet.

Portfolio Discussion Session (8.30-10.00am)

Clinical Skills Centre, Ninewells Hospital & Medical School

On the mornings of each day of the examination (22nd-24th May 2001) following a briefing session for all examiners, the two examiners for each student will meet and discuss the Portfolios which they have pre-read. During this discussion the Examiners will:

1   On the basis of the pre-reading Assessment, identify:

       a)   students who are clearly satisfactory against all outcomes;
       b)   students who have been found to have weaknesses.

2   Identify significant discrepancies between the two Examiners as entered in the Portfolio Assessment and Summary Sheet

3   Review Portfolios which have raised concerns

4   Agree how areas of concern will be explored during the Oral Examination

Oral Assessment – Review of Portfolio with Individual Students (10.15am–3.00pm)

Guidance to Examiners on the recommended format is set out in Appendix 4 with the important objective of achieving standardization.

The Oral Examination will proceed as outlined in the detailed oral examination timetable which will be provided to each Examiner with the names of the individual students allocated to them for examination.

During the oral, examiners are strongly encouraged to explore relevant areas of strength and weakness, which have been identified within the portfolio. Examiners should judge the portfolio across all its aspects and should refrain from focusing exclusively on their own areas of special interest. The Oral Examination will last for 40 minutes with the time being divided about equally between the two examiners. Following the Oral Examination, 5 minutes will be available for the two Examiners at each table to agree a grade for each of the curriculum outcomes.

Marking

The two examiners should enter their own individual marks on the scale of A-G for each outcome onto their own PAS sheets. Thereafter, the examiners should consult and agree a joint mark for each outcome which should be entered onto the final mark sheet. This agreed mark will be presented to the examiners meeting. All PAS and final mark sheets will be uplifted.

Examiners Meeting (3.45pm)

Final gradings for each student will be agreed at the Examiners Meeting. If a grade of E or less is given, examiners should state clearly the evidence for giving such a grade as this will be fed back to the student prior to the Final Examination in June.

Following the examiners meeting, students will be allocated to one of the following categories:

- **Exempt from Final Assessment**
  All 12 outcomes at a pass level (Grade D or above)

- **Exempt from Final Assessment, possible distinction**
  All 12 outcomes satisfactory with combined mark in grades in the top 10% of the class (for Distinction oral, see below).

- **Potential Exemption from Final Assessment**
  If only one outcome is awarded at Grade E (with all others at Grade D or above), further work will be assigned to address that limited deficiency in a particular outcome. Satisfactory completion of that work will lead to Exemption from the Final Assessment.

- **Not Exempt from Final Assessment**
  Two or more outcomes at Grade E or below or one or more outcomes at Grades F or G. An F grade should be given where the performance in an outcome is so poor that it may be expected to give rise to a global

deficiency in performance. When examiners are unsure of the candidates suitability to proceed to the PRHO year, their marks should reflect this by the award of a non-exempt grading.

These students will be required to undertake remedial work in relation to the outcomes with Grade E or below. Students requiring to undertake remedial work must submit the required work to the Medical School Office by <u>Wednesday, June 21st 2001. Failure to do so will lead to failure in the June Examination.</u>

The following students will be referred to the Final Assessment in June 2001.
- Students failing to gain exemption.
- Students who are potential distinctions.

A   Year 5 Final Assessment (June 25, 26 2001)
Students who fail to gain exemption will sit the final assessment examinations as follows:

i)   *Objective Structured Clinical Examination*

This will take place in the Clinical Skills Centre, Ninewells Hospital & Medical School at 9.00am on Monday 25th June 2001. The examination will have several manned stations and will be designed to test proficiency in the curriculum outcomes. The examination will be based on clinical material covered in the core activities of Phase 3 of the curriculum.

ii)   *Oral Examination*

On Tuesday 26th June 2001 at 9.00 am, there will be an oral examination with one external and one internal examiner, lasting 40 minutes. Students must submit any required remedial material before Wednesday, 21st June 2001 to illustrate how they have addressed the potentially deficient outcomes identified in the May Portfolio Assessment Review.

Following the oral assessment, a Final Examiners' Meeting will take place at which the following decisions will be made:

Passed Final Examination
- All grades at pass (Grade D) or better

Failed Final Examination
- One or more grades at fail (Grade E) or poorer

Students who fail the examination will have their cases considered by the Medical School Examination Board who will recommend one of the following:
- Further study and resit in December 2001
- Repeat Final Year
- Refer to Academic Review (Termination of Studies) Committee

iii)   *Distinction Assessment*

Students being considered for distinction will present at the Clinical Skills Centre at 9.00am on Monday 25th June 2001.
They will be given a problem-solving exercise to consider during the course of the morning. In the afternoon, at a time to be advised, they will present an analysis of the problem to two examiners who will determine if distinction should be awarded.

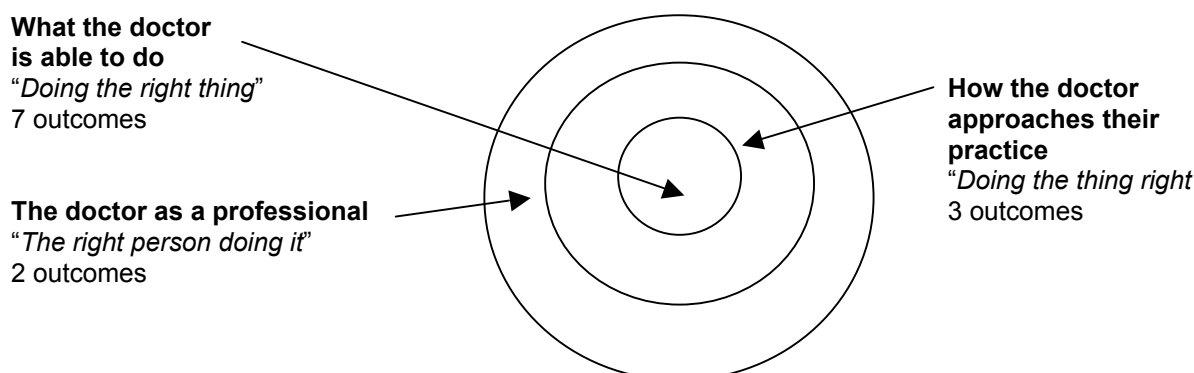## Completion of the PRHO Preparation Block

<u>All Students</u>, including those who did not achieve an exemption following the May Portfolio Review and Assessment, <u>must complete the PRHO Preparation Block</u> before being allowed to graduate.

The Learning Outcomes

Outcome-based Education – the Dundee Curriculum

The focus in medical education has moved from the "how" and "when" to the "what" and "whether". Learning outcomes are increasingly used as a focus for curriculum planning. Identifying, defining and communicating the skills and qualities doctors should have is fundamentally important for the curriculum. Staff and students need to be clear what our medical school or training programme is for and on which issues it will be judged. What sort of doctor are staff aiming to produce, and students aiming to become? What are the expected learning outcomes for the curriculum? Doctors have a unique blend of different kinds of abilities that are applied to the practice of medicine. What is needed or valued at any time depends on the context – at times it may be a practical intervention, at other times, diagnostic abilities and at other times a caring attitude and understanding.

In Dundee we have developed an interactive, user friendly and transparent approach to communicating learning outcomes. It emphasises the relevance and validity of the outcomes to medical practice. The three-circle model used (see figure) is based on the three dimensions of the work of the doctor.

What the doctor is able to do
"*Doing the right thing*"
7 outcomes

The doctor as a professional
"*The right person doing it*"
2 outcomes

How the doctor approaches their practice
"*Doing the thing right*
3 outcomes

1 The inner circle represents what the doctor is able to do, eg the physical examination of a patient. This can be thought of as "doing the right" thing. It can be equated with technical intelligence, in line with Gardner's multiple intelligences model.

2 The middle circle represents the way the doctor approaches the tasks in the inner circle eg with scientific understanding, ethically, and with appropriate decision taking and analytical strategies. This can be thought of as "doing the thing right" and includes the academic, emotional, analytical and creative intelligences.

3 The outer circle represents the development of the personal attributes of the individual – "the right person doing it". It equates with the personal intelligences.

The twelve key learning outcomes have been identified for the Dundee curriculum. Seven of these are in the inner circle, three in the middle circle and two in the outer circle.

Students entering the first year of the course in October were introduced to the expected learning outcomes in the Dundee curriculum. As they progress through the curriculum it will be indicated to them how each course and phase of the curriculum contributes to the achievement of the learning outcomes. Whether they have achieved the stated learning outcomes or not is the basis for their final assessment at the end of year five. Study guides in the different phases of the curriculum will be revised during the year to place more emphasis on learning outcomes.

(Further information on outcome-based education is available in the Association for Medical Education in Europe Guide No. 16, which is available in the Curriculum Office.)

The Dundee Doctor and the 12 Learning Outcomes

The three dimensions in the three-circle model can be distinguished in a number of respects. The inner circle represents the core of what the doctor has to be able to do – finite, well defined, explicit and visible and a mastery requirement for all doctors. Surrounding this is the middle circle outcomes – how we approach the tasks - less well defined and explicit and more open-ended and yet core. It is particularly in this area that doctors may excel and where one can distinguish the star performers from others. Outstanding professionals usually have special personal attributes.

Professionalism and the development of certain personal attributes as identified in the outer circle may be even less well defined than the outcomes in the middle circle. Nonetheless, they are of key importance and necessary in all doctors as emphasised by the GMC.

The first group of outcomes describes the competent doctor in terms of what he or she will be able to do.

1   *Competence in Clinical skills*

The doctor is competent to take a comprehensive, relevant medical and social history and perform a physical examination. He or she will be able to record and interpret the findings and formulate an appropriate action plan to characterise the problem and reach a diagnosis.

2   *Competence to perform practical procedures*

The doctor is able to undertake a range of procedures on a patient for diagnostic or therapeutic purposes. This usually involves using an instrument or some device, eg suturing a wound or catheterisation.

3   *Competence to investigate a patient*

The doctor is competent to arrange appropriate investigations for a patient and where appropriate interpret these. The investigations are carried out on the patient or on samples of fluid or tissue taken from the patient. The investigations are usually carried out by personnel trained for the purpose eg a clinical biochemist or radiographer, but may in some instances be carried out by the doctor.

4   *Competence to manage a patient*

The doctor is competent to identify appropriate treatment for the patient and to deliver this personally or to refer the patient to the appropriate colleague for treatment. It includes interventions such as surgery and drug therapy and contexts for care such as acute care and rehabilitation. It includes an awareness of complementary medicine approaches.

5   *Competence in health promotion and disease prevention*

The doctor recognises threats to the health of individuals or communities at risk. The doctor is able to implement, where appropriate the basic principles of disease prevention and health promotion. This is recognised as an important basic competence alongside the management of patients with disease.

6   *Competence in skills of communication*

The doctor is proficient in a range of communication skills including written and oral, both face-to-face and by telephone. He or she communicates effectively with patients, relatives of patients, the public and colleagues.

7   *Competence to retrieve and handle information*

The doctor is competent in recording, retrieving and analysing information using a range of methods including computers.

The second group of outcomes correspond to the middle circle and describe how the doctor approaches the seven competencies described in the first category.

8   *With an understanding of basic, clinical and social sciences*

The doctor understands the basic, clinical and social sciences that underpin the practice of medicine. He/she is able not only to carry out the tasks described in outcomes 1 to 7, but to do this with an understanding of what they are doing, including an awareness of the psychosocial dimensions of medicine. They can justify why they are doing it.

9   *With appropriate attitudes, ethical understanding and understanding of legal responsibilities*

Doctors adopt appropriate attitudes, ethical behaviour and legal approaches to the practice of medicine. This includes issues relating to informed consent, confidentiality, and the practice of medicine in a multicultural society.

10   *With appropriate decision making skills and clinical reasoning and judgement*

Doctors apply clinical judgement and evidence-based medicine to their practice. They understand research and statistical methods. They can cope with uncertainty and ambiguity. Medicine requires, in some cases, instant recognition, response and unre-flective action, and at other times deliberate analysis and decisions, and action following a period of reflection and deliberation. This outcome also recognises the creative element in problem solving that can be important in medical practice.

The last two outcomes relate to the outer circle and are concerned with the personal development of the doctor as a professional – the "personal intelligence's".

11   *Appreciation of the role of the doctor within the health service*

Doctors understand the healthcare system within which they are practising and the roles of other professionals within the system. They appreciate the role of the doctor as physician, teacher, manager and researcher. This implies a willingness of the doctor to contribute to research even in a modest way and to build up the evidence base for medical practice. This also recognises that most doctors have some management and teaching responsibility.

12   *Aptitude for personal development*

The doctor has certain attributes important for the practice of medicine. He or she is a self-learner and is able to assess his or her own performance. The doctor takes responsibility for his or her own personal and professional development, including personal health and career development.

In all 12 learning outcomes for the Dundee doctor, performance is underpinned by a number of cognitive and behavioural skills. The approach encourages the holistic view of medical practice with the outcomes in the middle and outer circles acting through the outcomes in the inner circle. The outcome model offers a framework for teaching and learning. It is a powerful tool for teachers designing and implementing the curriculum, for examiners assessing the students' performance and not least for students who ultimately have the responsibility for learning.

Portfolio Requirements

Contents
Your portfolio for the final examination during the week beginning May 21st should contain the following as evidence of your progress towards the 12 curriculum outcomes:

- Patient Presentations (10 from Year 4)
- Case Discussions (7 from Year 5)
- Year 4 Assignment (report and assessment form)
- Record of Achievement
- Clinical SSMs – outcome assessment forms and any written material
- Theme SSMs – outcome assessment forms and any written material
- PRHO Learning Plans (Medicine and Surgery)
- Elective Report and assessment form
- Any additional material which you feel is helpful in illustrating your progress towards the curriculum outcomes in Phase 3.

Organisation of the Portfolio

- The organisation of your portfolio is an opportunity for you to demon-strate to maximum effect your progress towards the 12 curriculum outcomes.
- An index to the content described above must be provided and the portfolio presented in an A4 binder: you should <u>not</u> use document wallets, and you should also avoid placing multiple pages within a single plastic document holder.
- The index should be followed by 12 single sides of A4, each headed with one of the curriculum outcomes. Under each outcome heading, analyse your experience relevant to that particular outcome, and summarise the evidence to be found within the portfolio which demonstrates your progress towards the outcome.

Patient Presentations

You are required to include your 10 patient presentations from Year 4.

Case Discussions

Each case discussion will demonstrate how your knowledge of one of the curriculum themes influences your understanding of the care of an individual patient. You are required to prepare seven case discussions each related to one of the themes of the curriculum. These are grouped in relation to the following curriculum outcomes:

Outcome 3	Patient Investigation	1.	*Biochemical Medicine* or *Investigative Procedures*
Outcome 4	Patient Management	2.	*Surgery*, or *Acute Care*, or *Therapeutics* or *Disability and Rehabilitation*
Outcome 5	Health Promotion and Disease Prevention	3.	*Health Promotion and Disease Prevention*
Outcome 8	Understanding of social, basic and clinical sciences	4. 5. 6.	*Behavioural Sciences* Basic Sciences (*Anatomy*, or *Physiology*, or *Biochemical Medicine)* Clinical Sciences (*Pathology*, or *Microbiology/Infectious Diseases*, or *Genetics*)
Outcome 9	Ethical understanding and legal responsibilities	7.	*Medical Ethics*

All case discussions must be submitted by the dates indicated on the next page

- A brief clinical summary of your patient should **not exceed 200 words**. It provides practice in the important skill of communicating the essential features of the problem, a skill which you will use regularly throughout your professional life in referring patients to colleagues either by telephone or by letter.
- Respect the confidentiality of the patient. This is a basic precept of Medical Ethics, and it is unacceptable to violate confidence. Use initials.
- The discussion will show how a curriculum theme helps in understanding the presentation and/or the outcome in your particular patient. Appendix 2 details the requirements of each theme.
- **The discussion (1000 words max) must show how the chosen theme related to your patient – a stand-alone essay is not sufficient**.
- The discussion should not be based solely on the level of core knowledge obtained in Phase 1 and 2 lectures. You should show evidence of building on this knowledge and developing critical/analytic abilities.
- The discussion should be evidence-based and should utilise references. Try not to depend on your core texts, but use these as a springboard to explore the literature. Better still use Medline. Be adventurous!
- Always give the references in the standard Vancouver style. If in doubt, check the style used in leading journals such as the Lancet and BMJ. This is good practice for writing case reports and papers!
- The discussion should follow a logical coherent structure with diagrams/ illustrations where appropriate.
- Case discussions must be typed and submitted with an assessment form (indicating the theme discussed) by the following deadlines:

Number of Case Discussions	Last date for submission
1	13 October 2000
2	15 December 2000
2	2 February 2001
2	30 March 2001

If completing a block "out" of Dundee you may return the Case Discussions on the following Monday.

- When marked, the case discussions should be included in your portfolio. Your Portfolio must contain seven case discussions with an overall grade of D or greater by 11th May 2001.

Record of Achievement

You must complete the Record of Achievement before your portfolio is submitted at the end of the year. Please note that competence to perform practical procedures is an essential outcome of the curriculum, and you must look after your Record of Achievement carefully: you will not be permitted to take the Year 5 portfolio examination without a completed Record of Achievement. Consider making a regular photocopy in case of loss. Continue to have procedures signed off during the clinical attachments.

It is recognised that some students will have occasional gaps in their experience through lack of opportunity. Students must inform the Medical School Office of potential gaps before the 30 March 2001. It is intended that there will be opportunities to complete these skills during the PRHO preparation block at the end of the year.

In Course Assessment Forms

Your PRHO apprenticeship learning plan and completed assessment forms, and the assessment forms from your theme-based, clinical and GP SSMs are an essential part of your portfolio. Make a copy of your learning plan and Clinical SSM forms before submitting them to the Medical School Office. A copy of your Theme SSM and GP SSM assessment forms can be obtained from the Medical School Office 4 weeks after the end of the block.

Elective Report

You are required to include your supervisors' assessment form and your marked elective report.

Additional Material

Include additional work which you feel demonstrates your progress towards the curriculum outcomes. This may for example include a response to any critical comments on marked work or on assessment forms, if this helps to show how you have dealt with the difficulty.

	Included in Portfolio	Marks Available
Outcome summary sheets	One page of A4 for each of the 12 curriculum outcomes	Not pre-assessed
Completed PRHO Learning Plans	Two Learning Plans (Medicine and Surgery) including two Assessment Forms	Marked by Supervising Consultant
GP – SSM	Written Report (may be extended SSM)	Marked by GP Tutor
Two Clinical SSM (one may be absent if Directed Study Core Revision Module undertaken)	An Assessment Form for each module plus any submitted material	Marked by Tutor
Two Theme-Based SSM	Submitted material depending on module requirements	Marked by Supervisor
Record of Achievement	Documentation of completed and observed Practical Procedures and Tasks Related to Management and Investigation Outcomes	Signed by Tutors or self certified as required
Case Discussions (7)	Students written discussions marked against relevant outcomes	Marked by Theme Co-ordinator
Elective Report	Written Report by Student and comments from on-site Supervisor	Marked by Elective Co-ordinator
Year 4 Patient Presentations (10)	Student Reports	Some Marked by Year 4 Blocks
Fourth Year Assignment	Students Written Report and Supervisors Review	Marked by Supervisor

Portfolio Assessment Interview

Guidance to Examiners

Although students presenting for their portfolio assessment interviews will have demonstrated differing levels of performance within their portfolio material, it is desirable that there should be a standardized approach to the oral assessment.

In conducting the interview, examiners should endeavour to determine the following:

Areas of strength within the portfolio

To identify these, the student should first be asked to self-select pieces of work within the portfolio which demonstrate his or her strengths. The student should describe the special value of these self-selected learning experiences.

Outcomes requiring further development

It is important that students should be aware of their own future learning needs. In the interview, they should be asked to reflect on learning objectives which they will set themselves in their PRHO years and to illustrate particular challenges identified in their portfolios.

Aspects of the portfolio requiring clarification

Examiners will identify components of the portfolio, which they will wish to explore with the students in greater detail. This further exploration may be directed towards areas of possible weakness or aspects of excellent performance.

In all of the above, examiners are encouraged to focus on work which has been submitted by the students within their portfolios.

Following the oral assessment, examiners should adjust their pre-oral marks up or down as appropriate to reach a jointly agreed grading for each outcome.

Guidance to Students

The examination will follow a common process as outlined above, but the content will be tailored for each individual student – all the portfolios are different, and students differ in their strengths and weaknesses.

Questions will be directed to establishing the level of competence in the different outcomes. The material in the portfolio, rather than the examiner's particular area of expertise, will form the basis of the examination.

In some oral examinations a third, external examiner will be present as an observer. An important function of this third examiner is the assessment of consistency of standards across the examination.

THE EDINBURGH STUDENT PORTFOLIO

Background
Several important 'threads' run through most forms of clinical practice, in most settings, irrespective of the clinical speciality. In the past, medical school curricula often failed to give due weight to topics which did not fit neatly into individual specialities. An important feature of Edinburgh's new curriculum is the emphasis given to these integrating threads, in the form of Vertical Themes.

Purpose
The purpose of the Portfolio is to enable students to address some important topics (Box 1) from within the curriculum's integrating Vertical Themes by drawing simultaneously on several cases (or projects) from several different specialities.

Medical students have a wide range of interesting and significant learning experiences. Recording them in a personal portfolio, in a way which facilitates reflection on the Vertical Themes, improves understanding of the Themes and should also increase insight into the development of personal frameworks of knowledge, skills, attitudes and behaviours.

The Portfolio forms the basis of the oral examination in the Final Professional Examination, when the examiners will assess understanding of the Portfolio Vertical Themes (PVTs) (Box 1 below) in a discussion in which students are encouraged to refer to individual cases/projects and, preferably, to combinations of cases/projects from the Portfolio.

<table>
<tr>
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PORTFOLIO VERTICAL THEMES   (PVTs)

Disability*
Pain
Nutrition
Life cycle**
Personal development
Communication
Evidence-based practice
Ethics & legal responsibilities
Psychological aspects of clinical practice
Pharmacology and therapeutics
Public health***

</td>
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*   Includes Rehabilitation, Impairment, Disability and Handicap

**   Students need not confine themselves to the human life cycle but, where appropriate, could also think in terms of life cycles ranging from bacteria to communities.

*** This encompasses both community-based aspects of Public Health and also issues of Health Promotion and Disease Prevention as they relate to the individual patient.

</td>
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</table>

Box 1 Those aspects of the Vertical Themes addressed with the aid of the Portfolio

Building a Portfolio
As students move through the course individual attachments and modules require them to complete case studies or project reports. These, the elements of the portfolio, are all important in their own right, as records of important learning experiences and as opportunities for diagnostic feedback and guidance from teachers. The Portfolio as a whole, however, should be greater than the sum of its parts.

In allocating cases teachers emphasise:
-   clinical conditions which may be seen frequently during the PRHO year,
-   instances where PVT issues have a particular bearing on the care of the patient.

Year 1   Year 1 includes two Portfolio items – Option 1 (the Problem Based Learning Project) and the 'Talking with Families' Project. In order to help the transition to medical school, early Portfolio elements are prescribed as a way of helping the structure of early Portfolio work. Each project attracts formative feedback.

Year 2 In Year 2 there are four elements to the Portfolio. These are the two Options projects and two cases written up from the Clinical Case Conferences of the Biology of Disease course.

Year 3 In Year 3 there are four elements to the Portfolio - one Portfolio case each from the Cardiovascular, Respiratory, Gastrointestinal and Locomotor modules.

Year 4 In Year 4 there are 6 elements of the Portfolio. These are four cases, the Special Study Module and an Overview. The cases are patients seen in General Practice, Psychiatry, Obstetrics & Gynaecology, and Renal Medicine or Haematology. The Overview is focussed on a PVT chosen from among a set of PVTs announced at the start of Term 3. To write the Overview, students draw extensively on the material in their Portfolio, especially on the patients and families with whom they have actually worked in Years 3 and 4. The Overview is marked and returned with feedback. The mark is carried forward into the Final Professional Examination.

Year 5 During Final Year a further five elements complete the Portfolio. These comprise three more cases, the report from the Elective Project and another Overview. The cases are patients seen in Child Life & Health, Geriatric Medicine, and 'Acute Specialities'. In the Overview students bring together the content of the Portfolio in a new unifying PVT, chosen from amongst a set announced during Term 1. It is marked and returned with feedback. The mark is carried forward into the Final Professional Examination.

Assessment of the Elements of the Portfolio
At or near the end of each module, course or attachment, Portfolio work is presented for assessment and is given a mark in accordance with the Medical Faculty's Common Marking Scheme.
The contribution of Portfolio material to In-Course Assessment varies according to individual courses, assessment patterns and weightings. Nevertheless, at the end of each year, students must have obtained at least a 'Pass' in each of the Portfolio items to progress to the next stage of the course.
Portfolio material is given a mark by teachers against an explicit set of criteria. When each piece of your work is returned it is accompanied by feedback about the strengths and weaknesses. Marks and feedback are sent to Director of Studies and copies are kept by Faculty Office.

At Finals
Students bring the entire Portfolio to the Finals viva. Examiners are given a copy of the two Overviews and the marks awarded for them. The Portfolio forms the basis of a 45-minute oral examination. This assessment completes the overall Portfolio mark.
The Portfolio examiners do not seek to assess fundamental factual knowledge. It may happen, however, that the Portfolio examiners find reason to believe that a candidate has important gaps in factual knowledge. In such a case, the examiners have the option of referring the candidate for a further (but knowledge-oriented) 45-minute oral examination, to be held during the second week of the Final Professional Examinations.

WRITING THE CASE REPORT
Guidelines are given below on the following aspects
- **Contents of the report**
- **Layout of the report**
- **Submission rules**

Contents of the Report
Students clerk the patient as they are when they see them, and document their current symptoms, signs and concerns. They imagine they are a junior doctor clerking a patient newly transferred into the ward, taking due account of all that has led to their admission to hospital and all that has happened between admission and transfer but with the responsibility for taking their management forward.

A Case Report should comprise:
Clinical History
Including, as appropriate, a summary of the results of the most relevant investigations and the patient's responses to therapeutic interventions already made. Also to include the patient's ideas, concerns and expectations.
Clinical Examination
As conducted by the student
Diagnostic Summary
A list of the patient's problems. Each problem with its corresponding list of contributing causes (physical, mental and social) supported, where appropriate, by the results of relevant investigations.
Management Plan
Detailing the further investigations and interventions that should be conducted, the explanation and advice that should be given to the patient, and the medication (including doses).
Discussion
Should address aspects of the **Basic Sciences** and of a range of the **Portfolio Vertical Themes** (see Box 1 above) as they relate to the 'case' being reported.
Layout Of Report
- Student's matriculation number, date and name of module all to appear at the top of every page.
- Printed in Times, not less than 12 point or Arial, not less than 11 point.

- Margins at least 2 cm.
- 1.5 line spacing
- Page number displayed on every page
- No more than 4 pages for Clinical History, Clinical Examination, Diagnostic Summary, and Management Plan combined.
- No more than 4 pages for the Discussion.
- Ensure that the patient's identity is concealed throughout.
- The use of standard clinical abbreviations is permitted in the Clinical History and the Clinical Examination.
- A telegraphic style (using lists) is often preferable to formal prose (using sentences).
- Where clarity will be enhanced, the use of diagrams is encouraged, *but will be included in the page count.*
- Layout violations will be penalised.

Submission Rules
One paper copy and one electronic copy of each Portfolio entry is submitted. The paper copy is annotated and returned along with the mark sheet. All the electronic copies are made available to the external examiners in Year 4 for review.
Electronic Portfolio
The management of the portfolio is run online. An electronic version of each of the items is held in a portfolio workspace and any submitted item can be viewed and/or printed at any time. Access to the Electronic Portfolio is via the Electronic Curriculum (EEMeC) at http://www.eemec.med.ed.ac.uk or direct at http://www.portfolio.mvm.ed.ac.uk .

Case Reports: Assessment and Feedback
Case Reports are marked by module tutors in accordance with criteria outlined in the assessment sheet, as shown below.

STUDENT ID NUMBER   **MODULE**

	FAILURE TO ATTAIN CRITERIA	**FAIL**	**MARGINAL FAIL**	**PASS**	**GOOD**	**VERY GOOD**	**EXCEL-LENT**	**EXCELLENT ATTAINMENT OF CRITERIA**
Clinical history	*Significant gaps / errors, poor structure.* *Omits relevant exploration of patient's ideas, concerns & expectations.* *Omits relevant 3rd party information.* Does not identify sources of info.	0 - 9	10 or 11	12 or 13	14 or 15	16 or 17	18 - 20	Complete, concise, accurate, logical structure. Explores patient's ideas, concerns & expectations in some detail, where appropriate. Info. from patient, relatives, carers where appropriate. Identifies sources of information.
Clinical examination	*Significant gaps.* Several errors in key clinical signs. Does not consider PR, PV exams.	0 - 9	10 or 11	12 or 13	14 or 15	16 or 17	18 - 20	Thorough in all 'systems', including BP & urinalysis. All relevant clinical signs elicited & clearly recorded. Gives indications for PR or PV examination.
Diagnostic summary	*Serious gaps in problem list.* Significant errors / omissions in differential diagnoses.	0 – 7	8	9 or 10	11	12 or 13	14 or 15	Identifies all active and inactive problems. Logical differential diagnoses covering all relevant physical, psychological and social factors.
Management plan	Several problems not addressed. Omits key investigations. Dangerous dosage errors. Omits interdisciplinary management. Does not address patient's agenda. Advice and explanation omitted, inappropriate or seriously wrong.	0 - 7	8	9 or 10	11	12 or 13	14 or 15	Logical, appropriate and thorough plan for all problems. Identifies all important investigations required and the action to be taken on the results. Good proposals for interdisciplinary management. Addresses patient's agenda Details advice & explanation to be given to patient.
Discussion	*With reference to **Basic Sciences** and a range of relevant **Portfolio Vertical Themes** (see attached list)* Discussion very limited**,** superficial, or irrelevant. No evidence of further reading.	0 - 9	10 or 11	12 or 13	14 or 15	16 or 17	18 - 20	*With reference to **Basic Sciences** and a range of relevant **Portfolio Vertical Themes** (see attached list)* .... Demonstrates detailed relevant knowledge integrated from many different sources. Thorough grasp of relevant concepts. Shows evidence of well-chosen further reading, including primary sources where appropriate.
General presentation	Disorganised layout. Errors in use of medical terminology Figures & tables unclear, poorly labelled, unhelpful. The work of others not acknowledged. Fails to use appropriate reference style.	0 - 4	5	6	7	8	9 or 10	Well organised, reader-friendly. Correct use of medical terminology. Effective use of clear, properly labelled figures and tables. The work of others appropriately acknowledged & cited.

COMMENTS – TO BE WRITTEN OVER THE PAGE

OVERALL MARK: SIGNED: DATE:

TUTOR'S COMMENTS ON CASE REPORT - FEEDBACK FOR THE STUDENT

The Overview Essays

One of the important functions of the Portfolio is to help students develop understanding of some of those aspects of medical practice that are multi-faceted and therefore difficult to learn from individual cases. These have been listed as the Portfolio Vertical Themes. It is expected that students will draw on their experiences of several cases to give them a fuller understanding of the themes. Different cases illustrate how the healthcare team addresses various aspects of the themes or how the experiences of the patient may be influenced by excellent (or absent) skills or knowledge within the theme. For example within your case studies you may have discovered that pharmacology and therapeutics is more than just knowing what drug to prescribe: it may be very difficult to establish concordance between the doctor and the patient to ensure drugs are taken as prescribed; it is easy to make mistakes in prescribing and giving medicines; and drug interactions may mimic other disease.

Overview Essays: Assessment And Feedback
The overview essays are marked by tutors in accordance with criteria outlined in the assessment sheet (q.v.). The marks for the overview essays in Years 4 and 5 are carried forward to the Finals viva.

STUDENT I.D NUMBER _____

TITLE OF ESSAY_____

PORTFOLIO OVERVIEW ESSAY
ASSESSMENT AND FEEDBACK

	FAILURE TO ATTAIN CRITERIA	FAIL	MARGINAL FAIL	PASS	GOOD	VERY GOOD	EXCELLENT	EXCELLENT ATTAINMENT OF CRITERIA
Analysis of the portfolio entries with respect to PVT	Fails to refer appropriately to portfolio elements. Restricted to an essay on the PVT No analysis of cases to demonstrate aspects of the PVT Lacking logical and systematic approach	0 - 19	20 - 23	24 - 27	28 - 31	32 - 35	36 - 40	Excellent use of portfolio elements Evidence of analytical and critical thinking with respect to 'cases' Logical development of information
Conclusion	No conclusion drawn from the overview	0 - 4	5	6	7	8	9 / 10	Conclusion expressed and well supported by evidence
Reflective practice	No evidence of reflection with respect to one's future practice							Clearly considers how past experience will influence one's future practice
Knowledge Concepts Understanding	Very limited, superficial, irrelevant knowledge of 'cases' and PVT Poor synthesis Serious misconceptions Concepts poorly explained	0 - 9	10 / 11	12 / 13	14 / 15	16 / 17	18 - 20	Detailed relevant knowledge, Integrated from many different sources Thorough grasp of relevant concepts with appropriate examples
Sources	Poor choice of sources The work of others not acknowledged Does not use an appropriate reference style	0 - 4	5	6	7	8	9 / 10	Excellent choice of sources Acknowledgement of others' work Appropriate reference style used
General presentation	Disorganised layout Many errors in grammar and spelling Poor sentence construction Poor use of figures & tables: not clear, poorly labelled, of doubtful relevance	0 - 4	5	6	7	8	9 / 10	Well organised Good grammar & spelling Fluent style Effective use of clear, properly labelled figures and tables
Originality	No evidence of original thought	0 - 4	5	6	7	8	9 / 10	Clear evidence of original thought throughout

COMMENTS:

OVERALL MARK: _____SIGNED : _____   DATE: _____

The documents included in Appendix 2 are examples of the current student suppport systems in Scottish medical schools including:

• The Aberdeen Advisors System

• The Aberdeen Regent System

• The Student Guide on the Dundee Student Support System

• The Tutor Guide on the Dundee Student Support System

UNIVERSITY OF ABERDEEN

FACULTY OF MEDICINE & MEDICAL SCIENCES
MBChB PROGRAMME

ROLE OF ADVISORS

1   to review with students their progress through Phase IV

2   to help students identify their own strengths and weaknesses

3   to help students overcome any problems/difficulties, including if necessary approaching ward consultants/GPs on their behalf

4   to encourage students to complete the objectives detailed in the Learning Guide, including the completion of their case portfolio

5   to consider assessment results and discuss these with the students and, where necessary, the Phase IV Co-ordinator and/or Student Progress Committee

6   to report as appropriate on the professional behaviour of students

UNIVERSITY OF ABERDEEN
UNDERGRADUATE PROGRAMME COMMITTEE (MEDICINE)

REGENT SCHEME

Job Description

The duties of a Regent shall include the following:-

• to make every effort to meet those regentees allocated to them at the beginning of their course and to contact them at the beginning of each academic session thereafter*;*

• to be available throughout the year to advise students both on academic and personal matters, and to refer students to relevant University welfare and administrative services where appropriate;

• to be familiar with the University's policies and procedures with respect to the provision of academic and personal support to students and to liaise with relevant University staff as appropriate (e.g. the University Regent; the Clerk to the U P C (Medicine); the University or Departmental Disability Co-ordinator);

• to, on receipt of information provided by the Medical Faculty Office, attempt to ascertain why regentees may be at risk of failing to satisfy progress requirements and to offer guidance and advice where appropriate;

• to act as an advocate on regentees' behalf (eg. by acting as a referee or by accompanying a student to an academic appeal or disciplinary hearing);

• and to assist the University in monitoring the effectiveness of student support.

STUDENT SUPPORT SCHEME

STUDENT GUIDE

Student Support Team

Student Support Secretary: **Ms Liza Goodwin**
Medical School Office, Level 10, Ninewells
Telephone Ext.: 32779
Email: l.j.goodwin@dundee.ac.uk

Student Support Co-ordinator: **Dr David Snadden**
Tayside Centre for General Practice
Telephone Ext.: 32771
Email: d.snadden@dundee.ac.uk

Assistant Faculty Secretary: **Mr John Edgar**
Medical School Office, Level 10, Ninewells
Telephone Ext.: 32916
Email: j.h.edgar@dundee.ac.uk

STUDENT INFORMATION

The Student Support Scheme provides an academic (although not necessarily medical) member of staff who will be associated with a group of approximately 12 students. These will be spread across the medical course. The tutor acts as a point of contact, support and guidance for those students throughout the four clinical years of the medical course in Dundee.

You will be allocated to a tutor in second year along with a small group of your colleagues. You will become part of the tutors group that includes students from all the years in phases 2 and 3. This mixed scheme started in 1999 so some groups will only have second years in them for the first year, others will have 10 or so students from one year.

The Role of a Tutor is to provide an academic role in an informal, social relationship and to introduce younger junior students to senior ones. More specifically tutors:

- are a source of support to students with academic related problems
- offer advice on choice of SSM's, elective attachments and career direction - especially choice of PRHO jobs
- are able to refer students with specific financial, emotional or health problems to more appropriate University Support Services
- act as an advocate for any student whose progress through the Medical School is being reviewed by Faculty or Senate

Expect your tutor to make contact with you either through the Student Cage or by email.   He or she will try to meet you as an individual or with your group. After that, your tutor will arrange to see you from time to time. If something is bothering you or you need advice before that time, then get in touch with your tutor by email or telephone.

In this leaflet you will find a list of University Support Services which are available to you.

TRANSITION ARRANGEMENTS
The scheme described here is a modification of the old tutor scheme in which tutors had 12 students from one year. There will be a transition period while the scheme is altered. For tutors with established groups they will be asked to take some second year students into their group. For tutors without groups their groups will start with a number of second year students and others will be added in the coming years.

WEB SITE
There is a web facility available for you to ask questions and seek help. This is run by the Computers in Teaching Unit (CIT) and your questions are automatically sent to a member of staff who returns an answer to you. The web site contains a page of frequently asked questions and also information on how to obtain confidential advice.

The address is http://www.dundee.ac.uk/cit/support/

OTHER UNIVERSITY SUPPORT SERVICES

Counselling Service 1 Cross Row, Main Campus
A Counselling Service for crisis or long term for relationship issues, sexual/marital difficulties, family worries, illness, bereavement, loneliness, debt, stress, anxiety or work related problems is available on the main campus. The Counselling Service is available in a secluded room at the Tayside Centre for General Practice every Thursday morning. For appointments at either main campus or TCGP phone Gillian Reid, Secretary.

Counsellors:	Catherine McPhail	344837
	Nick Halpin	**344163**
Secretary:	**Gillian Reid**	**344164**

In addition the following services are available:

Nightline (Run by students)	228310	Alcohol Anonymous	01382 223526
University Chaplain	344156	Drinkline	01713 220202
Citizens Advice Bureau	227171	Samaritans	0345 909090
Rape Crisis	201291	Women's Aid	01738 639043

Student Advisory Service 1 Cross Row, Main Campus

Head of Department:	Irene Donaldson	345487
Loans Administrator:	Catherine Allan	344801
Secretary:	Tracey Lavery	345492

Dundee University Student's Association (DUSA) Airlie Place, Main Campus **Tel. 221841**

Both the Student Advisory Service and the Students' Association offer advice on finance, course problems, student loan scheme, accommodation problems, support for international students, harassment and equal opportunities. A *Hardship Fund* for students in financial difficulties also exists, for further information, contact Lynne Douglas (DUSA representative) either by email, LZDouglas@dundee.ac.uk or via the Student Cage.

Special Needs Ewing Annexe, Smalls Wynd, Main Campus **Tel. 345091/345402**
Special needs support for students with disabilities, including dyslexia. Assessment and assistance with claims for Disabled Students allowance from LEAs can be arranged.

Health Advice 1 Cross Row (Ground Floor) **Sister Shand: 344168**
Advice is available on anxiety, tension, emotional upsets due to work etc, diet problems, drug taking, contraception, pregnancy and information on immunisation.

Careers – Information on Speciality Advisors Secretary: **Liz Symon: 344115**

Non Medical Careers - **166 Nethergate (opposite Tower building)**

Medical Careers
The Eastern regional Postgraduate Education Committee has appointed, in each area of Medicine, a speciality adviser, part of whose responsibility is the counselling of medical students regarding career advice. This is also a responsibility of the Deputy Director of Postgraduate Education. The following provide advice in the given specialities.

Speciality Advisers

Accident & Emergency
Dr Bill Morrison - Accident & Emergency Dept.
Ninewells Hospital & Medical School

Anaesthesia
Dr John Colvin - Department of Anaesthesia
Ninewells Hospital & Medical School

Child Health
Dr Sally Bonnar - Department of Child Health and
Adolescent Psychiatry
Royal Dundee Liff Hospital

Laboratory Medicine
Dr Philip Cachia - Dept of Laboratory Medicine
Ninewells Hospital & Medical School

Dermatology
Dr Sue Morley - Dept of Dermatology
Ninewells Hospital & Medical School

Otolaryngology
Mr Robin Blair - Dept of Otolaryngology
Ninewells Hospital & Medical School

Psychiatry
Dr Peter Rice - Department of Psychiatry
Royal Dundee Liff Hospital

Plastic Surgery
Mr Naasan – Dept of Plastic Surgery
Ninewells Hospital & Medical School

Urology
Mr Keith Baxby - Dept of Urology
Ninewells Hospital & Medical School

Neurosciences
Mr S Eljamel – Dept of Neurosciences
Ninewells Hospital & Medical School

Orthopaedic and Trauma Surgery
Professor David Rowley - Orthopaedic &
Trauma Surgery, TORT Centre,
Ninewells Hospital & Medical School

Geriatric Medicine
Professor Marion McMurdo
Geriatric Medicine
Ninewells Hospital & Medical School

Obstetrics & Gynaecology
Dr Tony Harrold (Chairman) – Obstetrics
& Gynaecology, Perth Royal Infirmary

Ophthalmology
Dr James Young - Dept of Ophthalmology
Ninewells Hospital & Medical School

General Medicine
Dr T. Pullar – Dept of General Medicine
Ninewells Hospital & Medical School

General Surgery
Mr Mike Lavelle-Jones – Surgery, Ward 8
Ninewells Hospital & Medical School

Epidemiology
Professor Hugh Tunstall-Pedoe
Cardiovascular Epidemiology
Ninewells Hospital & Medical School

Infectious Diseases
Dr Dilip Nathwani
Kings Cross Hospital, Dundee

Respiratory Medicine
Dr John Winter - Kings Cross Hospital, Dundee

Child Health
Dr Donald Macgregor - Dept of Child Health
Perth Royal Infirmary

Radiology
Dr Christine Walker - Dept of Radiology
Ninewells Hospital & Medical School

General Practice
Dr David Snadden
Tayside Centre for General Practice
Kirsty Semple Way, Ninewells Hospital

Oncology & Cancer Medicine
Professor Elaine Rankin – Medical Oncology
Ninewells Hospital & Medical School

STUDENT SUPPORT SCHEME

TUTOR GUIDE

STUDENT SUPPORT SCHEME

Dear Colleague

Thank you for agreeing to take part in the Medical School's Student Support Scheme as a Tutor. I am enclosing some introductory information which I hope will be helpful. If you have any other questions please contact me or Liza Goodwin.

Good Luck
David Snadden
Student Support Co-ordinator

The Student Support Team is:

Student Support Secretary:

Ms Liza Goodwin
Medical School Office, Level 10, Ninewells
Telephone Ext.: 32779
Email: l.j.goodwin@dundee.ac.uk

Student Support Co-ordinator:

Dr David Snadden
Tayside Centre for General Practice
Telephone Ext.: 32771
Email: d.snadden@dundee.ac.uk

Assistant Faculty Secretary:

Mr John Edgar
Medical School Office, Level 10, Ninewells
Telephone Ext.: 32916
Email: j.h.edgar@dundee.ac.uk

Students can usually be contacted by mail at :-

c/o Student Cage
Level 6
Ninewells Hospital and Medical School
Dundee DD1 9SY

If you need help or advice, please do not hesitate to contact us

TUTOR INFORMATION

The Student Support Scheme provides an academic (although not necessarily medical) member of staff who will be associated with a group of approximately 12 students. These will be spread across the medical course. The tutor acts as a point of contact, support and guidance for those students throughout the four clinical years of the medical course in Dundee.

You will be allocated a small group of second year students each year. Academic support for first year students is provided by Phase 1 tutors. We expect tutors will see less of their fourth and fifth year students as they spend much of their time out of Dundee.

The Role of a Tutor is to provide an academic role in an informal, social relationship and to introduce younger junior students to senior ones. More specifically tutors:

- are a source of support to students with academic related problems
- offer advice, or guide students to sources of advice, on choice of SSM's, elective attachments and career direction - especially choice of PRHO jobs
- are able to refer students with specific financial, emotional or health problems to more appropriate University support services
- act as an advocate for any student whose progress through the Medical School is being reviewed by Faculty or Senate

How you deal with your tutor group is up to you, however here are some suggestions:

- Try to meet your new students early in the Autumn term.
- Some tutors like to see their students as a group, some prefer to meet them individually some prefer a mixture.
- Your first meeting may be a social meeting somewhere. Some tutors use the staff club, a bar or their homes. For new members of the group the most important thing is to try to get to know them and persuade them that you are not the ogre that they think all members of staff must be!

Whatever you decide to do OUR RESEARCH TELLS US THAT YOU NEED TO INITIATE THE CONTACT WITH YOUR STUDENTS.

Once you have established contact you will probably find that student contact with you is variable with some keen to meet you regularly and some only appearing if they are having difficulties or needing advice. You will also find that senior students will contact you less as they spend quite a lot of their time outside Dundee. We have found that email contact seems to be the best way to keep in touch.

It is helpful to make yourself available for informal contact, so how about giving your students your contact phone numbers at work and home, your secretary, if you have one, and your email address.

If you have a student who is having difficulty we suggest that you keep some written records of advice given.

If one of your students runs into difficulties the Medical School Office will let you know. Once the MESMIS computer system is up and running you will be able to access the academic records of your students. MESMIS will also make email contact with your students even easier. Once MESMIS is available staff development sessions on how to use it will be offered.

A list of University Support Services is attached for you to refer your student to if they require additional counselling. We have developed a student support web page which gives up to date contact details and which students can post questions on and seek confidential help. The web page address is http://www.dundee.ac.uk/cit/support/

Why not visit the page now and bookmark it in case you need information in the future and have lost these paper sheets.

TRANSITION ARRANGEMENTS
The scheme described here is a modification of the old tutor scheme in which tutors had 12 students from one year. There will be a transition period while the scheme is altered. For tutors with established groups they will be asked to take some second year students into their group. For tutors without groups their groups will start with a number of second year students and others will be added in the coming years.

The documents in appendix 3 give further information on the guidelines and assessment related to Fitness to Practise issues in the Scottish medical schools and includes:

- Aberdeen students' ethical code

- Dundee students' ethical code

- Edinburgh students' ethical code

- Discussion paper from Dundee on need for Fitness to Practise Committee

- Description of Aberdeen's Fitness to Practise Procedures

- Examples of assessment which may inform the Fitness to Practise Procedures

  - Aberdeen's General Practice assessment

  - Aberdeen's 3rd Year Special Study Module Peer Assessment

  - Edinburgh's Feedback on Teamworking and Meeting Skills

  - Edinburgh's Peer Marking Sheet for Group Working

  - Glasgow's Clinical Attachment Assessment Sheet
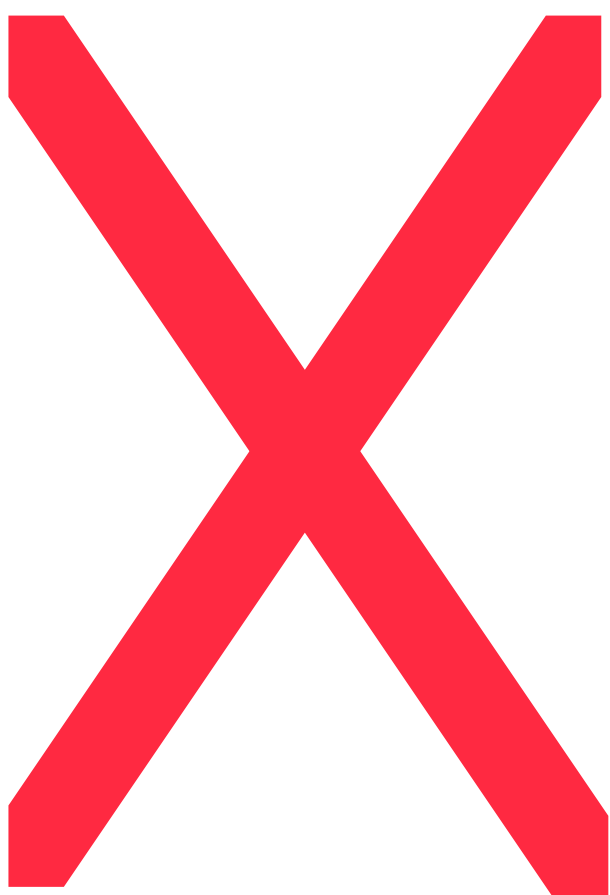
University of Dundee

Declaration by MBChB Undergraduates

1. I recognise that as a student of the medical profession I am in a privileged position. I undertake not to abuse that position. In particular, I shall not take advantage in any way of individuals who, by virtue of my being a medical student, put their trust in me.

    I shall seek always to deserve the trust of patients. To this end, I shall be truthful in my dealing with them, defend their interests, show due regard for their wishes, preserve the secrets which they confide in me as their doctor, as far as my duty to society as a whole will permit, and I shall aim to act fairly between one patient and another.

2. Even when a person's beliefs, traditions and values differ from my own, I shall always do my best for that individual as a patient.

3. I shall respect patient confidentiality and shall not divulge inappropriately the names or the medical features of people who I meet as patients.

4. In addition to respecting individuals, I shall attempt to relate to patients I meet with empathy and with patience

5. As a medical student, who will be a member of the healthcare team which is committed to the pursuit of scientific knowledge, I shall at all times act in ways which show respect for human life and for the distinctive dignity which characterises human beings. This respect will extend to my conduct in the presence of and in my dealing with deceased human beings.

6. I shall seek constantly to improve my medical knowledge and skills and share these with fellow students and colleagues in related health professions in order that our patients may be better served.

7. I shall carry out my professional duties including my studies, my written submissions, any research in which I participate and any teaching I do, with meticulous honesty and integrity. In this regard, I shall be particularly careful to ensure that I do not copy or plagiarise the work, old or new, of other individuals.

8. I shall treat my colleagues in the medical profession and in related professions with respect and cooperation, for the good of patients.

9. I shall aim to bring credit to my University and to those who have taught me.

Now that I am about to train for the profession of medicine, I commit myself to observing its high standards and valued traditions.

Signed:………………………………..   Date:…………………………

Print Name:……………………………..   Year:…………………………

UNIVERSITY OF EDINBURGH

ETHICAL CODE OF CONDUCT FOR STUDENTS OF MEDICINE

This ethical code has been approved by the Faculty of Medicine and the appropriate University Committees. As from session 1999-2000, it has been signed by all new entrants to the Medical School in Year 1. It is reproduced here for the benefit of students who have not seen it before, and as a reminder for those who have. It defines a standard which will inform the future deliberations of the Faculty of Medicine Fitness to Practice Committee.

As a student of Medicine at the University of Edinburgh, I have read and understood the following ethical code and agree to follow it at all times to the best of my ability.

- In the course of my involvement in patient care, I will ensure that the welfare of the patient is my primary concern, and treat patients with politeness and consideration.
- I will respect the dignity and privacy of patients and relatives, and learn to communicate with them effectively.
- I will not give patients or relatives information I am not empowered or qualified to give.
- I will recognise the limits of my competence, and not undertake clinical practice without appropriate authority and supervision.
- I will not abuse my status as a medical student.
- I will conduct myself at all times in a professional manner, and ensure that my behaviour and appearance are appropriate to the professional environment in which I am educated.
- I will ensure that my personal beliefs do not prejudice my medical education and my dealings with patients.
- I will learn to function effectively alongside others in a team. I will respect students and practitioners in other disciplines.
- I will be honest and trustworthy.
- I will at all times respect and protect confidential information.
- I will accept the extent of my responsibility for my own learning within the academic environment.
- I will attend scheduled teaching and learning programmes unless prevented by valid cause. I will complete the specified schedule of work for each programme.
- I will ensure that all submitted work is my own unless clearly stated otherwise.
- I will participate fully and honestly in a dialogue with my teachers regarding the quality of the educational process.
- As a student of medicine, I will develop my knowledge of medicine, my clinical skills, and my professional attitudes to the best of my ability.

Fitness to Practise Issues and the Requirement for a Fitness to Practise Medicine Committee

In the new medical undergraduate curriculum in Dundee, topics such as attitude, ethical stance, and communication skills are part of the core curriculum and are an integral part of the academic assessment process. Other factors, which could affect the fitness of an individual to practice medicine, are not included in the academic assessment process. Such factors include criminal conviction, psychiatric illness, disabling physical illness, drug dependency and the development during the course of an infectious illness which might put patients at risk.

Both the Dean of the Faculty of Medicine, Dentistry and Nursing and the Postgraduate Dean are currently required to take decisions on the fitness to practise of individual students or junior doctors without formal mechanisms being in place for the Deans to receive advice. Both Deans are of the opinion that the existence of a formally appointed University Fitness to Practice Committee would be of assistance to them. We therefore propose:

1 The University formally creates a Fitness to Practise Committee.

2 The committee should be an advisory committee – with the specific remit of advising the two Deans on fitness to practise issues.

3 The brief of the committee should be to advise the relevant Dean in respect of the individual student/junior doctors on matters such as criminal conviction, significant psychiatric illness, significant disabling physical illness, drug dependency, and infectious illnesses that pose a risk to patients.

4 The Committee should be relatively small and include in its membership the Dean of the Faculty, the Postgraduate Dean, a senior consultant, a junior doctor, a general practitioner, and the student mentor scheme organiser. Specialist advice could be sought in relation to individual cases/issues eg psychiatry. The committee should be chaired by a non-medical Deputy Principal.

5 The Committee would only meet on an *ad hoc* basis at the request of the Dean or the Postgraduate Dean. It would report to the Medical School Board of Studies and to the Faculty Board of Medicine, Dentistry and Nursing.

In the light of the close scrutiny to which the medical profession and the medical schools are currently exposed, it is, in our view, essential that the University does set up a Fitness to Practise Committee.

_____   _____
Dean   **Postgraduate Dean**

Faculty of Medicine, Dentistry & Nursing
Dean/Fitness to Practise Medicine   Draft 15th December 1999

UNIVERSITY OF ABERDEEN
FACULTY OF MEDICINE AND MEDICAL SCIENCES

FITNESS TO PRACTISE

1.   INTRODUCTION

1.1   This paper outlines changes to the Regulations for the Degrees of MB ChB, following guidance from the GMC in 1996 in their document "Student Health and Conduct".[2]

1.2   In accordance with the Medical Act 1983, a student who graduates with the Degrees of MB ChB is automatically entitled to provisional registration with the General Medical Council. There is, as yet, no statement in the Act on fitness to practise, although a draft amendment is currently under consideration via the Health Act 1999.

1.3   The Dentists Act 1984 states that a person, in addition to being appropriately qualified, must satisfy the Registrar of the General Dental Council that he or she is "of good character and is in good health both physically and mentally."

1.4   The Report[3] by a joint group of the CVCP Medical Committee and the GMC Education Committee included the following:

1.4.1   *"A heavy responsibility therefore falls on universities with medical schools in the UK: in awarding medical degrees to their students they are entitling those students to be entered on the Medical Register. Universities must accept the consequences of that responsibility. It means that any conduct, behaviour or other matters that could bear on a student's suitability or fitness to practise medicine or deal with patients which comes to light during the student's course must be properly handled by the university. The university's responsibility is clearly not confined to academic issues only. The recommendations… are designed to equip universities to discharge this responsibility fully and fairly, having regards both to the interests of the public and of the students."*

1.4.2   *"The kind of conduct or behaviour of relevance in this context may manifest itself in misconduct falling under universities' codes of student discipline or it may arise in circumstances not disclosing a disciplinary offence. Each of these situations calls for separate treatment."*

1.5   It is thus clear that in addition to fulfilling the academic criteria, candidates for the Degrees of MB ChB must also be judged "fit to practise" medicine.

1.6   The regulations for the Degrees of MB ChB have therefore been amended (final draft approved by University Court 21 March 2000.)

1.7   It is also proposed to establish a Fitness to Practise Committee, being a sub committee of the UPC (Medicine) Students' Progress Committee.

2.   AMENDMENTS TO THE REGULATIONS FOR THE DEGREES IN MEDICINE

2.1   The approved amendment to the Degrees in Medicine Regulations is as follows:

        Any health, conduct, behaviour or other issue that could bear on a candidate's suitability or fitness to practise medicine will be investigated by the UPC (Medicine) Fitness to Practise Committee. The Senatus Academicus, having considered the recommendation of the UPC (Medicine) Students' Progress Committee, may suspend or terminate the studies of candidates for the Degrees of MB ChB who, following a proper process of investigation, are judged not "fit to practise".

3.   PROPOSED REMIT OF THE FITNESS TO PRACTISE COMMITTEE

3.1   The remit of the UPC (Medicine) Fitness to Practise Committee will be to consider the cases of individual MB ChB students who may, on account of any health, conduct, behaviour or other issue, be unsuitable or unfit to practise.

3.2   The referral of a student to the Fitness to Practise Committee will not affect his or her academic results.

3.3   Student conduct that is in breach of the University Code of Practice on Student Discipline will be dealt with under the prescribed procedures.   However, MB ChB students who have been found guilty of an offence under the University disciplinary proceedings will be referred to the Fitness to Practise Committee.

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[2] "Student Health and Conduct" published by the General Medical Council, 1996.

[3] Medical and Dental Student Health and Conduct: Final Report of a Joint Group of the CVCP Medical Committee and the GMC Education Committee, 1997.

3.4 University of Aberdeen MB ChB Graduates in their pre-registration year will be included in the remit of the Fitness to Practise Committee. The composition of the Committee will then also include a senior representative from the employing healthcare trust and the disciplinary and appeals procedures will reflect those of the relevant employer.

3.5 Procedures relating specifically to the Pre-Registration House Officer year will be published separately.

4. PROPOSED MEMBERSHIP OF THE FITNESS TO PRACTISE COMMITTEE

4.1 The Fitness to Practise Committee will be distinct from the Students' Progress Committee. It will be convened by the Dean or his or her Deputy and members will comprise the Postgraduate Dean, two members of senior clinical academic staff, two members of senior clinical non-academic staff, one member of senior non-clinical academic staff and one lay member. Administrative support will be provided by the Clerk to the Degrees in Medicine.

5. PROPOSED PROCEDURES FOR REFERRAL TO THE FITNESS TO PRACTISE COMMITTEE

5.1 Any formal notification of cause for concern about a medical student's fitness to practise will be made to the Dean of the Faculty of Medicine & Medical Sciences or his or her Deputy. Such referrals may be made, for example, by a Board of Examiners, a Phase Co-ordinator, a Sub-Dean or the Convener of the Students' Progress Committee.

5.2 After investigation, as he or she may think appropriate, the Dean or his or her Deputy may either dismiss the allegation or refer it to the Fitness to Practise Committee. However, any allegation that appears to involve a matter of student discipline will be referred to the University Secretary, for action as appropriate under the University Code of Practice on Student Discipline.

5.3 The standard of proof applied under the Fitness to Practise procedures shall be proof beyond reasonable doubt.

5.4 Where a case has been referred to the Fitness to Practise Committee, the student shall be informed in writing of both the allegation made against him or her and of the date and venue of the Committee meeting. He or she will also be provided with a copy of the relevant regulations and guidance. If requested by the student, a meeting may be adjourned to a later date if the interests of justice would be served thereby.

5.5 The student may be accompanied or represented at any meeting by any person of his or her choice.

5.6 A student will normally be required to attend any such meeting in person. Where the Dean or his or her Deputy believes that the student has wilfully refused to attend, he or she may nonetheless proceed to conduct the investigation and reach a decision on the case.

5.7 The Fitness to Practise Committee shall consider the evidence as submitted by interested parties, such as medical certificates or reports from members of staff, and may make any such enquiries as it thinks fit. The student shall receive copies of all written submissions that are considered.

5.8 The Convener of the Fitness to Practise Committee will outline the procedures to be followed. He or she will explain why the student has been referred to that Committee and ask him or her, and/or his or her representative, to respond.

5.9 Members of the Fitness to Practise Committee will be given the opportunity to seek clarification on any of the points made, either by the student or his or her representative.

5.10 The student and his or her representative will be invited to make any further points as they wish, including a concluding statement. Once all the evidence has been heard, the Convener will summarise the case, outline the options available to the Fitness to Practise Committee and ask the student and his or her representative to leave the room.

5.11 The Fitness to Practise Committee will consider all the evidence and reach its decision, which will then be confirmed to the student in writing.

5.12 The Fitness to Practise Committee may decide to refer the Student to the Students' Progress Committee, to the University Secretary (for action as appropriate under the University Code of Practice on Student Discipline) or decide that no further action is required at that time.

5.13 The Fitness to Practise Committee may also decide that it is not appropriate to make a decision on that day. In such a case, the Committee must reach a final decision within five working days of the date of the hearing.

5.14 The student and his or her representative will be invited back into the room to be informed of the Fitness to Practise Committee's decision, which will be thereafter confirmed in writing.
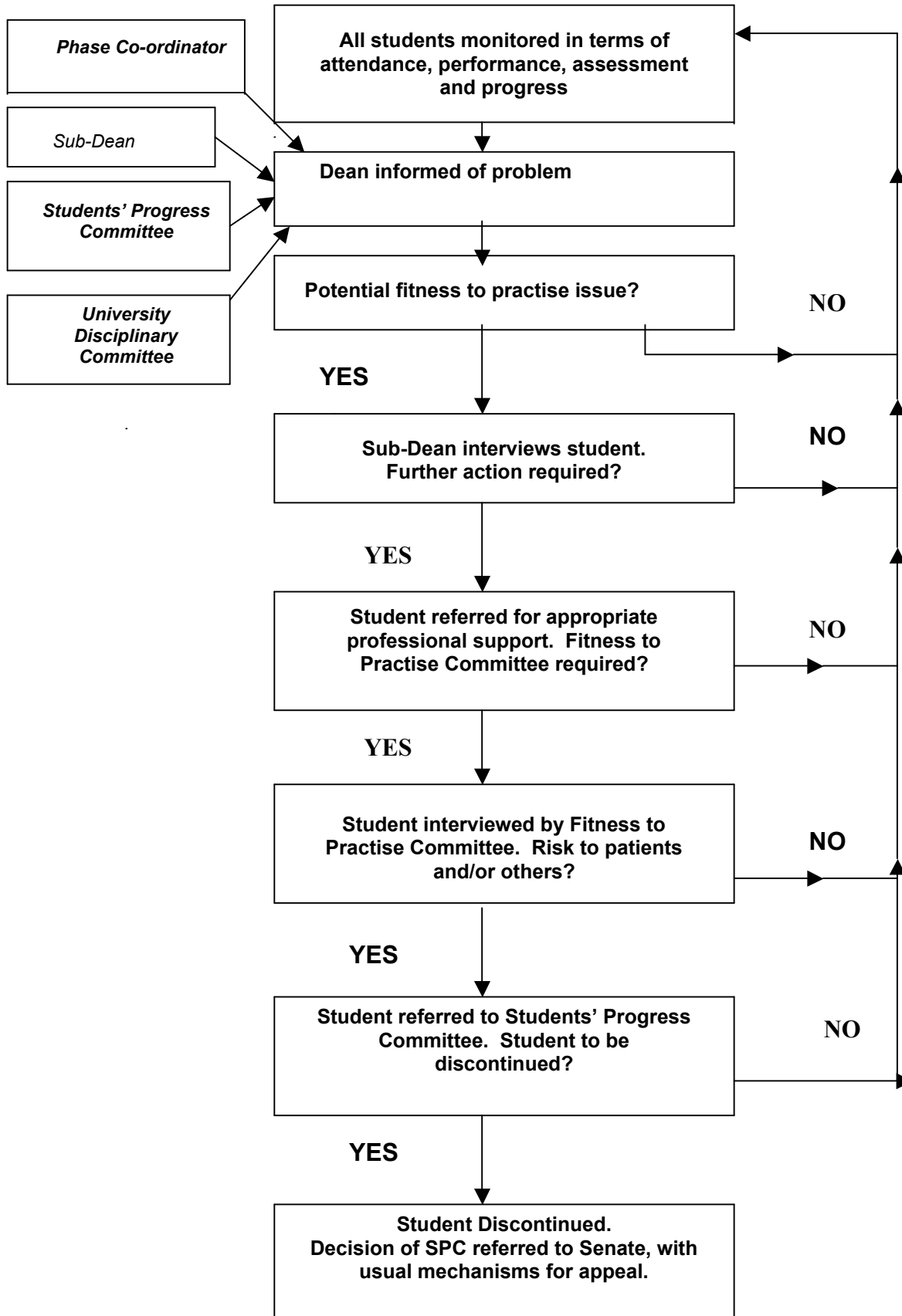
5.15 The student shall have the right of appeal to the University Court as under current University appeal procedures.

6.   REFERRAL TO THE UPC (MEDICINE) STUDENTS' PROGRESS COMMITTEE

6.1   The Convener of the Fitness to Practise Committee will make any referrals to the Students' Progress Committee in writing, together with any recommendations by the Fitness to Practise Committee.

6.2   All evidence that has been considered by the Fitness to Practise Committee will be forwarded to the corresponding Students' Progress Committee.

6.3   If the Clinical Sub Dean has convened the Fitness to Practise Committee, he/she will not be present at any corresponding Students' Progress Committee, other than to give evidence as requested.

6.4   The student may be accompanied or represented at any meeting by any person of his or her choice.

6.5   A student will normally be required to attend any such meeting in person. Where the Convener of the Students' Progress Committee believes that the student has wilfully refused to attend, he or she may nonetheless proceed to conduct the investigation and reach a decision on the case.

6.6   The Students' Progress Committee shall consider the evidence as submitted by the Fitness to Practise Committee and may make any such enquiries as it thinks fit. The student shall receive copies of all written submissions that are considered.

6.7   The Convener of the Students' Progress Committee will outline the procedures to be followed. He or she will explain why the student has been referred to that Committee and ask him or her, and/or his or her representative, to respond.

6.8   Members of the Students' Progress Committee will be given the opportunity to seek clarification on any of the points made, either by the student or his or her representative.

6.9   The student and his or her representative will be invited to make any further points as they wish, including a concluding statement. Once all the evidence has been heard, the Convener will summarise the case, outline the options available to the Students' Progress Committee and ask the student and his or her representative to leave the room.

6.10   The Students' Progress Committee will then reach its decision, having considered all the evidence presented to it.

6.11   The Students' Progress Committee may decide to suspend or terminate study for the Degrees of MB ChB, or to refer the student to the University Secretary (for action as appropriate under the University Code of Practice on Student Discipline) or decide that no further action is required at that time.

6.12   The student and his or her representative will be invited back into the room to be informed of the Students' Progress Committee's decision, which will be thereafter confirmed in writing.

6.13   Any decision made by the Students' Progress Committee shall be deemed to be a decision of the University Senate itself.

6.14   The student shall have the right of appeal to the University Court as under current University appeal procedures.

UNIVERSITY OF ABERDEEN

UNDERGRADUATE PROGRAMME COMMITTEE (MEDICINE)

FITNESS TO PRACTISE

Phase Co-ordinator	**All students monitored in terms of attendance, performance, assessment and progress**
Sub-Dean	**Dean informed of problem**
Students' Progress Committee	**Potential fitness to practise issue?** → **NO**
University Disciplinary Committee	

YES

Sub-Dean interviews student. Further action required? → **NO**

YES

Student referred for appropriate professional support. Fitness to Practise Committee required? → **NO**

YES

Student interviewed by Fitness to Practise Committee. Risk to patients and/or others? → **NO**

YES

Student referred to Students' Progress Committee. Student to be discontinued? → **NO**

YES

Student Discontinued. Decision of SPC referred to Senate, with usual mechanisms for appeal.

Degrees of Bachelor of Medicine and Bachelor of Surgery (MB ChB)

RESOLUTION

The degrees of Bachelor of Medicine and Bachelor of Surgery (MB ChB) are conferred in accordance with Resolution No 148 of 1991, which was approved by the University Court on 14 May 1991.

REGULATIONS

1. The degrees of Bachelor of Medicine (MB) and Bachelor of Surgery (ChB), hereinafter called 'the degrees', may be conferred by the University of Aberdeen. The degree of Bachelor of Medicine shall not be conferred otherwise than with the degree of Bachelor of Surgery, and *vice versa*.

2. (a) The curriculum shall extend over such period as the Senatus Academicus may determine, and can be undertaken by full-time study only.
   (b) A candidate shall spend at least three academic years in study in the University. The remaining period of the curriculum may be spent in any other University or Medical School approved for this purpose by the Court after consultation with the Senatus Academicus.

3. The Senatus Academicus may determine the conditions under which a candidate may be exempted in whole or in part from instruction or from instruction and assessment in any subject for the degrees.

4. The examiners for the degrees shall be Professors, Readers, and Lecturers who conduct courses qualifying for graduation in Medicine and Surgery in the University, and such other internal and external examiners as the Court shall appoint; provided that every candidate shall be assessed in each prescribed topic by at least two examiners of whom one shall not be a Professor, Reader or Lecturer in the University.

5. Every candidate for the degrees of Bachelor of Medicine (MB) and Bachelor of Surgery (ChB) is required to comply with the requirements of admission to the degree programme. Possession of these qualifications does not of itself guarantee admission.

6. The courses for the degrees of Bachelor of Medicine and Bachelor of Surgery shall cover five years. The subjects to be followed shall be as prescribed in the Schedule of Courses appended to these Regulations.

7. Candidates' knowledge of the various subjects listed in the Schedule of Courses shall be assessed from time to time as the Academic Standards Committee (Science, Engineering & Medicine), on the recommendation of the Undergraduate Programme Committee (Medicine), may determine and the results may be taken into account in the prescribed degree assessments.

8. The degree assessments, at which at least one examiner shall be an external examiner appointed by the University Court, shall be as prescribed in the Schedule of Prescribed Degree Assessments appended to these Regulations.

9. The prescribed degree assessment shall be in writing in each subject and there may also be an oral, a practical and a clinical assessment, except in the fifth year. In that year candidates shall be assessed clinically as well as by project work in each degree subject. In determining the result of any such assessment the examiners shall take account of the records of any practical and clinical work performed by candidates during their attendance on the prescribed course of instruction. The Undergraduate Programme Committee (Medicine) shall have the power to exempt from all or part of any prescribed degree assessment those candidates who have achieved the standard required for award of a pass in such written class assessments, or other course work, undertaken previously as it may designate for this purpose.

10. (i) Candidates shall not be admitted to a prescribed degree assessment in any subject unless they have attended the course or courses of instruction in that subject in that academic year and fulfilled such conditions as may from time to time be prescribed by the Senatus Academicus, unless otherwise exempted by the Senatus Academicus on the recommendation of the Undergraduate Programme Committee (Medicine).

(ii) If candidates have not passed completely the degree assessments prescribed by Regulation 8 above by the end of the period in which they are normally held, and met the level of performance of class work required by the relevant Heads of Departments/Phase Co-ordinators, the Undergraduate Programme Committee (Medicine) shall consider whether they should be permitted to continue as matriculated students for the degrees, and the Senatus Academicus, having considered the recommendation of the Undergraduate Programme Committee (Medicine), may require candidates to discontinue attendance on classes for the degrees and exclude them from further assessment or, if it permits them to continue, may prescribe conditions.

(iii) Notwithstanding Regulations 10(i) and 10(ii) above, the Senatus Academicus may, in individual cases, on the recommendation of the Undergraduate Programme Committee (Medicine), permit students to present themselves as external candidates at one subsequent diet of assessment and such external candidates who pass the appropriate degree assessments prescribed by Regulation 8 above will be eligible to apply for re-admission to the degrees of MB ChB.

(iv) Notwithstanding the provisions of University regulations which permit candidates to present themselves for assessment in the same subject at two diets of assessment in any one session, candidates may be required to undertake an additional period of clinical study or a repeat period of study, specified by the Examiners, before being permitted to present themselves at a second diet of assessment in that subject.

(v) Unless granted a concession by the Undergraduate Programme Committee (Medicine), candidates must satisfy all requirements for the award of the degrees within six calendar years of the date of their first matriculation as candidates for the degrees.

(vi) Candidates who wish to establish that their academic performance has been adversely affected by their health are required to secure medical certificates relating specifically to the periods which are relevant.

(vii)   Illness and/or other personal circumstances which affect performance before or at examination must be notified in writing to the Clerk to the Degrees in Medicine not later than one week after the examination. Where events prevented the student from notifying the University within seven days, the student should set out in a letter details of the events which prevented him/her from notifying the Clerk within the prescribed period.

11. The Senatus Academicus, on the recommendation of the Undergraduate Programme Committee (Medicine), shall have power to terminate during the academic year the studies of candidates who persistently fail to perform the required work of the classes or to attend the classes which they are required to attend.

12. Except by permission of the Senatus Academicus, on the recommendation of the Undergraduate Programme Committee (Medicine), candidates may not proceed to the next part of the programme unless they have completed or gained exemption from all the previous prescribed degree assessments.

13. In the case of a candidate who at any University recognised for the purpose by the University Court has attended courses of instruction and passed the corresponding assessments in any of the subjects prescribed for the first two phases, such assessments may be accepted as equivalent in whole or in part to the corresponding assessment of the University of Aberdeen, provided that:

(a) in the judgement of the Senatus Academicus the course of instruction is equivalent to the course prescribed for graduation in the University of Aberdeen, and that the standard of the assessment is satisfactory;

(b) the Senatus Academicus may require such a candidate to take the equivalent assessment of the University of Aberdeen;

(c) exemption may only be granted from the prescribed degree assessments of the first two phases.

14. Any health, conduct, behaviour or other issue that could bear on a candidate's suitability or fitness to practise medicine will be investigated by the UPC (Medicine) Fitness to Practise Committee. The Senatus Academicus, having considered the recommendation of the UPC (Medicine) Students' Progress Committee, may suspend or terminate the studies of candidates for the Degrees of MB ChB who, following a proper process of investigation, are judged not "fit to practise".

15. The degrees shall not be conferred on candidates who have not passed all the degree assessments prescribed by Regulation 8, by the end of the period allowed for submission.

16. The degrees may be awarded with Honours or with Commendation, according to the merit displayed, to those candidates who are specially recommended by the examiners.

17.   (a) Candidates for the Degrees of MB ChB who *either*

(i) have failed to complete the requirements for those degrees within six calendar years of the date of their first matriculation for those degrees, *or*

(ii) can no longer do so, *or*

(iii) have indicated in writing to the Undergraduate Programme Committee in Medicine that they no longer wish to pursue a curriculum leading to the degrees of MB ChB;

but who (in each case) have obtained, while registered at the University of Aberdeen, not fewer than 60 credits towards the degrees may, on application, be awarded the Degree of Bachelor of Medical Science (B Med Sci).

(b) A candidate who graduates with the Degree of Bachelor of Medical Science may not subsequently be a candidate for either the Degrees of MB ChB or the Degree of Bachelor of Science in Medical Sciences (BSc Med Sci).

(c) The Degree of Bachelor of Medical Science shall not be recognised as a qualification which entitles its holder to be registered with the General Medical Council of the United Kingdom.

EXAMPLES OF ASSESSMENTS
TO INFORM THE FITNESS TO PRACTISE COMMITTEE

The following assessments are currently undertaken in the Scottish medical schools and have particular importance in assessing the Doctor as a Professional throughout the curriculum. Currently this valuable information is lost within modular assessments. The group recommends that these assessments are tracked separately over the 5-year course as well as contributing to modular marks to ensure that non-academic aspects of fitness to practise are given due weight and considered over the longer term. This will allow minor concerns to trigger interviews and early interventions to help the student followed by documented re-assessment to ensure

effective resolution of any difficulties. It will also mean clearer information about the student who causes disquiet in several tutors without raising severe adverse comments from any one. This pattern of 'some concern' should be become more transparent when tracked over time.

The following documents include:

- Aberdeen's end of block assessment for General Practice

- Aberdeen's 3rd Year Special Study Module Peer Assessment

- Edinburgh's Feedback on Teamworking and Meeting Skills

- Edinburgh's Peer Marking Sheet for Group Working

- Glasgow's Clinical Attachment Assessment Sheet

Aberdeen – End of block assessment for General Practice

Professional attitude

	Unable to assess	Unstisfactory	Satisfactory	Excellent
Sensitive to ethical issues (patient's rights, confidentiality)	☐	☐	☐	☐
Works well with staff	☐	☐	☐	☐
Objectively critiques own performance	☐	☐	☐	☐
Demonstrates responsibilit (reliable, punctual)	☐	☐	☐	☐
Demonstrates initiative	☐	☐	☐	☐

Comments:

Please identify this student's strengths:

Please identify this student's weaknesses:

Please identify 3 key areas that the student should work on in their 2nd and 3rd weeks:

Signed Tutor_____   Signed Student_____

Aberdeen Phase II 3rd year MBChB – Special Study Module
Peer Assessment

Theme_____

Topic_____

Student Name_____

Grading: 5 – Excellent contribution   2 – Less than acceptable contribution
               4 – Good contribution   1 – Minimal contribution
               3 – Acceptable contribution   0 – No contribution

Categories	Names of group members				
	Self				
1. Attendance at meetings					
2. Contribution of ideas and suggestions					
3. Contribution to allocated tasks					
4. Contribution to overall project					
TOTAL					

Aberdeen Peer Assessment SSM II – 2001

Please award a mark between 0 and 10 for each member of your group. The assessment is of the contribution to the project made by individual members of the group. This should cover contribution to group discussions, contributions to ideas, carrying out tasks, workload and overall input.

Project Title: _____

Project Tutor: _____

Student Name: _____

Name	Peer Assessment Score (0 – 10)

Marks should be awarded on the 10 point scale on page 8 of your learning guide. A mark of 4 and above is a pass.

Marking Scale for tutors and students:
 (Page 8 of Learning Guide)

Mark	Descriptor	Comments
10 9 8	Outstanding	The best performance that can be expected from students at this level in the time available
7 6	Very good	Shows a very thorough grasp of concepts
5	Good	Basic level of understanding
4	Marginal pass	Minimum level of performance required for a pass
3	Marginal fail	Weak, not adequate
2	Obvious fail	Well below pass level
1	Grossly inadequate	Contains major errors and misconceptions. Abysmal
0		Token or no submission

FEEDBACK ON TEAMWORK AND MEETING SKILLS
IN
SMALL GROUP LEARNING
(EDINBURGH)

NAME OF STUDENT_____   TITLE OF CCC_____

SKILLS	EXCELLENT ATTAINMENT OF CRITERIA	EXCELLENT	V. GOOD	GOOD	ACCEPTABLE	POOR	FAILURE TO ATTAIN CRITERIA
Collaborative, Interactive & Supportive skills	Creates a safe environment; encourages free exchange of ideas; respects others' roles / responsibilities; empathic to other members; listens actively; excellent at negotiation & conflict resolution.						Very critical of others; makes minimal guarded contributions only; insensitive to others; speaks too much & does not hear others' contributions especially if they conflict; confrontational or denies conflict.
Leadership skills (the chair or not)	Excellent contribution to ideas; defining objectives; shaping and planning work; builds and motivates the team.						Makes no significant contribution to ideas, defining objectives, shaping and planning the work; no attempt to encourage others.
Implementation skills	Outstanding ability to put ideas into action; evidence of extensive self-directed learning; can be relied upon to complete and on time.						No significant contribution to implementation of plans; very limited evidence of self-directed learning; work brought back to the group is low quality, incomplete or late.
Evaluation skills Adaptability	Demonstrates reflective practice; evaluates progress and results; adapts in light of evaluation or changing circumstances.						Does not evaluate progress or results; finds it difficult to adapt plans even when progress is poor or circumstances alter.
		EXCELLENT	V. GOOD	GOOD	ACC.	POOR	DID NOT DO	
Taking the 'chair' (if possible)	Defines objectives; steers a meeting through it's business; summarises findings, conclusions, and agreed action; involves everyone; delegates sensitively according to ability and to ensure support is given.							Does not set goals; allows the meeting to ramble and be side-tracked; favours contributions from certain members; does not summarise decisions and plans; does not delegate or 'dumps' without consideration and support.
Being the scribe (if possible)	Can take notes or minutes accurately and disseminate information as appropriate.							Does not make a clear note of decisions or distribute information if required.

COMMENTS: **NON-ATTENDANCE = 0 OVERALL**

SIGNED (IF TUTOR): _____   DATE: _____

UNIVERSITY OF EDINBURGH

Year 2 Clinical Case Conferences

Peer Marking

Your overall mark for this work will be determined by the mark awarded to your CCC report, modulated by a mark from your peers. The peer mark is based on your contribution to the group process i.e. in the meetings and outwith. The criteria are listed on the next page.

- You have 3x(n-1) marks to award, where n is the number of students in your group. You don't mark yourself.
- Therefore, if you mark someone up, you must also mark someone (or several people) down.
- Decimal points are allowed (e.g. marks of 4, 2.75, 2.75, 2.75, 2.75).
- Averaged marks will have the following effect on final scores:

Average mark awarded	Final Mark
5	increased by 20%
4	increased by 10%
3	= that awarded for the group's output
2	reduced by 10%
1	reduced by 20%

- Tutors/facilitators will see the marks, ensure that they have been fairly allocated and justified, and approve them before submission.
- Marks that are not submitted or are incorrectly applied will be excluded from analysis.

EXAMPLE

GROUP: The Philosophy of Orthopaedics
TUTOR: Professor Sutherland
YOUR NAME: .

Name	Mark	Comments (Justify High or Low Marks)
Adi	1	Only turned up to tutor-led sessions. Negligible contribution.
Brenda	3	
Colin	3	
Dillon	5	Driving force behind the group. It wouldn't have been any good without him.

Now please award marks to your colleagues using the following table:

GROUP: ………………………………………………………………………………………….

TUTOR: ………………………………………………………………………………………….

YOUR NAME: ………………………………………………………………………………………

In arriving at a mark, consider the following:

        a) Did they attend meetings?
        b) Were they bright, keen, full of ideas?
        c) Did they allow/encourage others to play their part?
        d) Were they helpful?
        e) Were they reliable (e.g. completing work as agreed, on time)?
        f) Were they freeloading?

Name	Mark	Comments (Justify High or Low Marks)

Now briefly describe your own specific role in the group.

What did you contribute to the project?

What mark do you think that you deserve? (Leave this blank if you prefer)

Signed: …………………………………………………   Date: ……………

Please submit this form to your group tutor/facilitator

University of Glasgow Medical School

Years 4 & 5 Block Assessment

			Highly satisfactory	Satisfactory	Borderline	Unsatisfactory
Doctor as professional	A	Attendance and reliability	Highly dependable and conscientious.	Dependable and usually punctual	On time, most of the time. Usually gives warnings of absence	Often unreliable. No warnings given if not attending
	B	Ability to manage own learning	Recognises gaps in knowledge. Formulates relevant challenging questions. Learns appropriately. Recognises inconsistencies	Usually recognises gaps. Asks appropriate questions. Asks for advice if answers not obvious.	Recognises gaps but some have to be pointed out. Usually needs a little help with learning objectives	Often fails to recognise gaps in knowledge. Needs considerable assistance in remedying gaps in knowledge
Approach to professional work	C	Relationship with colleagues	Rapidly fits into the team. Establishes good relationships, recognises the roles of each member of the team	Collaborates well. Usually easy to work with. Understands the roles of team members.	Limited understanding of the roles of team members. Just managing on the ward	Uncooperative. Disruptive. Does not fit well into the team
	D	Knowledge	Has extensive knowledge, usually applies this to clinical problems. Eager to extend knowledge.	Has adequate knowledge base. Can apply this to clinical problems with minimal help. Reads around the subject.	Has a fair knowledge base. Needs some help with application to clinical problems. Limited reading around the subject.	Patchy knowledge base. Often has trouble applying knowledge to clinical problems. Does not read around the subject.
Clinical competence	E	History taking	Well organised, thorough and accurate. Consistently obtains relevant information	Organised, usually accurate. Obtains relevant information most of the time	Adequate, mostly accurate. May have difficulty separating relevant and irrelevant information.	Poorly organised. Information gathered is often inaccurate. Regularly misses relevant information.
	F	Communication skills	Consistently establishes good rapport. Gets relevant information efficiently and sensitively. Able to explain the situation to patients and passes on accurately information to colleagues	Usually established good rapport. Usually gets relevant information. Communicates reasonably well with patients and colleagues.	Some difficulty putting patients at ease. Gets relevant information with minimal assistance. Generally able to explain situation to patients and colleagues adequately.	Unable to put patient at ease. Often insensitive. Communicates with difficulty to patients. Can give inaccurate information. Poor communication skills with colleagues.

			Highly satisfactory	Satisfactory	Borderline	Unsatisfactory
Clinical competence (cont'd)	G	Clinical Examination skills	Consistently accurate in detecting and interpreting clinical signs.	Usually accurate. Rarely misses or misinterprets signs.	Satisfactory technique. Needs help with interpretation.	Poor technique. Regularly misses signs. Regularly misinterprets signs.
	H	Clinical judgement	Consistently able to integrate all relevant information. Produces appropriate management plan for investigation.	Regularly integrates information. Produces accurate differential diagnosis list. Usually produces appropriate management plan.	Usually able to integrate information. May need assistance with differential diagnosis and management plan.	Often unable to integrate information. Regularly produces inappropriate differential diagnosis list.
	I	Practical procedures	Masters most procedures expected from a new PRHO.	Masters more procedures than might be expected for a student at this stage.	Adequate mastery of the procedures expected from a student at this stage.	Poor mastery of technique to be expected from a student at this stage.
Integration	J	Portfolio cases	Consistently obtains accurate information about the patient. Always produces differential diagnoses list and appropriate investigations to differentiate these problems. Always includes clinical and relevant topics (science, ethics, public health, etc.) in discussion and addresses these problems using appropriate evidence from the literature.	Obtains accurate information from the patient. Identifies major issues. Identifies differential diagnoses list and accurate investigations. Usually relates case to aetiology, public health, etc. using appropriate evidence.	Obtains accurate information. Identifies major issues. Usually produces differential diagnoses list with appropriate investigations. Difficulty in discussing the wider issues surrounding the case.	Often obtains inaccurate information. Regularly unable to identify major issues. Fails to produce differential diagnoses system management plan and usually fails to include discussion on underlying topics.
Number of portfolio cases completed		7/8 week blocks 5 week blocks	Above 8 Above 5 (N = 5)	Above 6 Above 4	Above 5 Above 3	<5 <3 (N = <3)
Grade in the student assessment	K		A	B	C	D/E

**GOOD EXAMPLES OF OTHER ASSESSMENT TOOLS FOR
THE DOCTOR AS A PROFESSIONAL**

There are examples of assessment tools to be used within Domains 11 and 12 in other relevant sections of this report. However here we have gathered together some assessment tools which have been mentioned in the tables of recommended assessments but not demonstrated elsewhere. These include:

- Glasgow's Medical Independent Learning Exercise [MILE] ('Self-directed learning')
- Aberdeen's General Practice Assessment ('Healthcare Systems')
- Aberdeen's Learning Needs Assessment ('Self-awareness')
- Aberdeen's Peer Assessment on Poster Presentation ('Student as Mentor' and Self-awareness')
- Edinburgh's Feedback on Oral Presentations ('Student as Mentor' and Self-awareness')
- Dundee's Record of Achievement ('Self-awareness')

UNIVERSITY

of

GLASGOW

Medical School
Medical Independent Learning Exercise (MILE)
Wednesday 13th June 2001
9.00 a.m.

The completed exam should be handed in to the Medical Faculty Office by 9.30 a.m. on Thursday 14th June 2001.

All information should be written in the examination booklet provided which should be clearly labelled with your matriculation number and candidate number (as the desk number).

Guidelines

The MILE is designed to evaluate not only <u>how</u> but <u>how well</u> you can:

- formulate relevant questions in relation to a scenario
- use available resources in a systematic and sensible fashion under the given constraints
- summarise that information in a short report

All information should be written on the examination booklet under the following headings;

1. Questions Generated
2. Utilisation of Sources (sources used and their usefulness)
3. Written Report
4. Unresolved issues

1. Questions Generated

It is obviously important that your research begins with a clear focus. Think carefully about your initial question(s) or issue(s) and specify these clearly.

2. Utilisation of Sources
List the resources which you use in this enquiry (see attached sheet for guidelines on the use of resources). Remember to include information on the usefulness of resources and alternative strategies adopted if appropriate.

3. Report
The report is a summary of the information obtained from the questions generated.

4. Unresolved issues
Any unresolved issues should be outlined. This may relate to questions which were difficult to resource or new questions that were thought of whilst carrying out the research.

The written report section should be approximately 300 words but no more than 500 words (state the number of words used). Any words in excess of the 500 word limit will not be considered as part of the report and therefore will not be read.

Marking
Examine the assessors' rating form carefully to ensure that you understand the criteria by which your MILE will be assessed.

Resources

Textbooks
All students should have access to the basic textbooks and we would assume that these will be used as initial sources.

Specialist books
There are obviously only very limited numbers of these available and thus only a few people can use these at any one time. If you find a useful looking book on the catalogue, but cannot access it, it would be legitimate to state this.

Bibliographic Databases
Useful references to review articles may be found by using electronic searches (you have had sessions on these as part of your IT course). Again, however, only a few people can access the **original** article at any one time. Multi-user access to **abstracts** on databases such as MEDLINE is, however, available. These abstracts will be perfectly acceptable to use as resources. (If you are not registered for these services please see the library).

Internet
The use of information from Web pages is acceptable provided that you give some detail as to the publisher of the page to give an idea of validity (i.e. a page by the British Diabetic Society would be acceptable but one written by an individual in their bedroom would not). Articles or abstracts from E-Journals are also acceptable sources.

Relevant Experts

You may use any relevant expert as a source. You should outline who you have approached and the sort of information they provided.

You are encouraged to use a selection of the above resources.

Please list all the resources you have used and provide sufficient detail to enable markers to refer to them if required.

In order to allow the maximum access to computer terminals the computers in both CC1 and CC2 in the Kelvin Building will be available only to those undertaking the MILE that day.

In addition, any of the other open clusters in the University can also be used (subject to availability).

All of the above terminals have access to the Library services and the Web.

Marking Scheme

1. Generation of specific question(s)

0	1	2
Mainly irrelevant or superficial. Unaware of basics.	Identifies basic issue(s). Clear, researchable statements.	Comprehensive and clear statements of relevant, researchable issues.

2. Resources
a) Identification of information sources and search plan

0	1	2
Inappropriate or irrelevant list of sources. Mainly irrelevant or inappropriate sequence.	Relevant sources. Adequate consultation given time availability constraints	Comprehensive and effective search plan. Various options or changed plans still allowed efficient search in spite of availability problems

b) Appraisal of Information

0	1	2
Mainly uncritical. Unrelated to questions. Unjustified focus on one perspective or acceptance of certain information.	Critical appraisal with evidence of seeking alternative perspectives	Clear and comprehensive review of information from various sources. Well justified in terms of balanced perspective and relevance to questions

3. Report
a) Summary of Information and Conclusions Drawn

0	1	2
General lack of synthesis . Wrong or unjustifiable conclusions. No relation between conclusions and obtained information Inappropriate emphasis	Acceptable synthesis. Important factor(s) emphasised and justified.	Clear synthesis of information obtained and still needed. Conclusions well justified and specific to original questions set.

b) Outline of Unresolved Issues in Relation to Questions

0	1	2
Mainly ignorant of issues Irrelevant or trivial issues only listed. Insufficient or inaccurate outline (with no explanation). Inability to relate issues to questions set.	Main issue(s) listed. Sufficient and accurate explanation.	Comprehensive list of issues Clear indication of reasons for them being unresolved and their relevance to the original questions set.

Mock MILE Question

Mr McRory comes into your surgery asking for advice on the effects of dyes on his health. He has recently joined a new firm that makes chemical dyes for the fashion industry and the firm is offering a screening programme. He has heard from friend that a newspaper reported that someone working with dyes died of a cancer and Mr McRory is concerned that this could happen to him.

Mock MILE Answer

Questions Generated

1. What harmful effects may chemical dyes have on the body?
2. What signs are Doctors looking for in this patient's urine sample?
3. What is the purpose of the screening program?

Resources

Textbooks:

General and Systemic Pathology 2nd Edition; Churchill Livingston; 1996; pp 264-268
- Excellent source providing a good amount of detail on how Aromatic Amines cause bladder cancer.

Clinical Medicine 3rd Edition; Kuhmar and Clark; 1996; p495
- Only provided one useful sentence on cytological examination of urine.

Oxford Textbook of Medicine 3rd Edition vol. 1; Edited by Weatherall, Ledingham, Warrell; pp 216, 1167
- Provided statistics to support the relationship between exposure to dye stuffs and cancer and a small paragraph on aromatic amines which provided useful points.

Medical Dictionary; Oxford; 1996
- This source was helpful in explaining some difficult terms I came across in other books (e.g. conjugation).

Specialist Textbooks:

Human Cancer: Epidemiology and Environmental Causes; J. Higginson, C. S. Muir, N. Munoz; 1992
- Had a lot of irrelevant information on bladder cancer with only a few interesting points on the causative agents (information I had already gathered from the pathology book). The rest of the book was information on other cancer and was of no relevance.

Chemical Carcinogenesis; Clayton; 1962
- Reinforced the relationship between dye industry and bladder cancer. Also had some useful points about the purpose of screening programs.

Organic Chemistry – A short course; Hast; 1987
- I used this source to find out about dyes but it was far too complicated to be of any help in this report.

Banburry Report: Quantification of occupational cancer; 1981
- Shows trends in the U.S. between occupational hazards and cancer which again reinforced the idea that cancer is related to exposure to chemical dyes.

ABC of Urology; BMJ Publications; pp26-28
- Gave a good, comprehensive explanation of what Doctors look for in a urine sample, particularly in patients with bladder cancer.

Bibliographic Databases

BIDS EMBASE

Performed a search on: Bladder Cancer and Dyes
                        Bladder Cancer and Screening

Found most was irrelevant apart from:

"Estimates of occupational cancer in Korea"; Sangyo Eiseigaku Zasshi
- This provided evidence that there was a higher incidence of bladder cancer amongst workers in dye factories

"Prostate and Bladder Cancer Screening"; Journal of the American College of Surgeons vol. 186 (i); pp 63-74; 1998
- I was unable to get the article but the headings sounded as if it would have been quite helpful in providing information on screening.

I also performed searches on: dye, bladder cancer, chemical agents and disease with MEDLINE and BIDS ISI but was unable to find articles of relevance

Internet

I performed a search under: Bladder
                                 Carcinoma
                                 Dyes

Most of it was too technical or irrelevant apart from:

"Health and Safety Standards of Dyes"; ETAD (Ecological and Toxological Association of Dyes)
http://www.nacdef.com/publicat/ETAD/dye/Intro.htm
- Provided very helpful information on all the different effects (short and long term) dyes can have on the body.

Magazine

"What you need to know about cancer"; Scientific American; 1996; pp79-80
- Gave good points on why screening programmes should be carried out and also a little on the effects of chemical dyes on the body.

Experts

Dr S. Armstrong; Department of Organic Chemistry.
- Was helpful in making clear to me the different aromatic amines as I was a little confused. However, she went into a lot of detail which I found too complicated for this stage.

Dr T. I. F. Macleod; Cytologist
- Very helpful in outlining what Doctors look for when giving a urine sample of a worker in a dye factory and also provided useful information on the purpose of screening programmes.

Report

The physical state of chemical dyes, level of exposure, length and route of exposure determine how badly the body can be effected. Harmful effects of dye can be split into two categories:

1. Acute toxicity effects
2. Chronic toxicity effects

Acute toxicity effects include skin irritation, contact dermatitis, eye irritation and respiratory tract irritation (which may lead to sensitisation).
Chronic toxicity effects include damaging effects on organ function and cancer. If dye enters the circulation it can be metabolised into either
a) a less toxic substance excreted via urine/faeces OR
b) a more toxic substance that may damage organs or act as potential carcinogens

In dye factories, a higher incidence of bladder cancer exists amongst men. Aromatic amines in the dye (e.g. aniline, 2-napthylamine, benzidine) and azodyes are causative agents. Most also require metabolic conversion to active carcinogens. β-napthylamine requires conversion by hydroxylation in the liver. Because of conjugation with glucuronic acid, however, there is no carcinogen effect until it is deconjugated in the urinary tract (which is why the cancer is most common in the bladder).

Statistics show occupational exposure to chemicals is responsible for one third of bladder cancers.

In conclusion, dyes can have many different harmful effects ranging from skin irritation due to short term exposure, to bladder cancer due to long term exposure.

For patients like this man, doctors carry out cytological tests to examine for tumour cells (early signs of malignancy). They also look for signs of haematuria (blood in urine). Macroscopic haematuria with no pain may mean a patient has urothelial cancer. There may also be protein casts present, due to damage to organs in the urinary tract. Therefore, in the case of a chemical dye worker, doctors are searching for signs of cancer, in particular, malignant cells.

The main purpose of screening programme is prevention. It is aimed to detect early changes (e.g. the presence of malignant cells) so that effective treatment may be given and precautions taken. The overall aim is to reduce is to reduce the incidence of cancer in the screened population (i.e. in this case, the workers of this chemical factory).

Another reason for this company having this regular screening programme is to avoid risks of paying large amounts in compensation to workers who may develop cancer. In the 1950's (without these programmes) it was found that those who contracted the disease received compensation without litigation. However, because of the development of these screening programmes, workers today who want compensation must go through court.

Therefore, it is important to carry out screening programmes to detect malignancy at
a still treatable stage, thus reducing the incidence of cancer and to protect the companies from the demands of compensation.
Word count = 455 words

Unresolved Issues

- Different ways dyes enter the body to cause the harmful effects.
- Composition of dyes and differences between carcinogenic and non-carcinogenic dyes.
- More detail on how dyes cause the acute toxicity effects.
- Other carcinogens which may also contribute to increased incidence of bladder cancer.
- Accuracy of cytological tests on urine sample.
- How to determine malignant cells from normal cells in the urine (e.g. what microscopic differences exist).
- The effectiveness of the screening programme (e.g. great reduction??).

The above issues remain unresolved due to:
a) A lack of time e.g. unable to look through all the articles on the internet.
b) Lack of resources e.g. denied access to articles which seemed useful.
c) Word limit (unable to discuss topics is much detail).

Aberdeen – 5th year undergraduate medical programme

Student assessment

Name_____ Date_____ Marker_____

Practice_____ Topic allocated_____

Topic studied if different from topic allocated_____

Summary of marks	Content:	**TOTAL MARK**	
	Research:		
	Presentation:		

NOTES:

1. CONTENT

TOPIC					Score (max)	Score (actual)	Score TOTAL
Medical details	None	Too little	About right	Too much	2		
Social details	None	Insufficient	Adequate	Excellent	5		
Current care details	None	Insufficient	Adequate	Excellent	5		
Consideratiopn of improvement	None	Insufficient	Adequate	Excellent	4		
Future as perceived by	Patient Y/N/n.a.	Prf. carer Y/N	Other carer Y/N/n.a.	Other e.g. self	4		(max 30)

2. RESEARCH

TOPIC				Score (max)	Score (actual)	Score TOTAL
Interview Who?	Patient Y/N	GP Y/N	Partner Y/N			
Other	HV Y/N	DN Y/N	Children Y/N			
Other	Neighbour/friend Y/N	SW Y/N	Other relative Y/N			
Effort	Poor	Adequate	Good	3		
Information	Poor	Adequate	Good	3		
No. home visits	Accompanied	Unaccompanied		3		
Investigative approach	Poor	Adequate	Good	2		(max 20)
Any constraints						

3. PRESENTATION

TOPIC					Score (max)	Score (actual)	Score TOTAL
Order of material		unstructured/poor	integrated/good	very good	5		=30/3
Timing (rec 10 mins)		too short	about right	too long	4		
Visual aids	Acetates - number	too few	about right	too many	3		
	Acetates - quality	poor	average	good	5		
	Other (___)	poor	average	good	5		
Oral skills		poor	average	good	4		
Question handling		poor	average	good	4		(max 10)

Aberdeen – General Practice Attachment
Extract from Student Learning Log

Needs assessment (Pre-course)

Please complete each statement with a x in the appropriate box

I am satisfied with my ability in the area of:

	not at all	partly	completely
	☐ ☐	☐ ☐	☐ ☐

Clinical knowledge

	not at all	partly	completely
Dermatology	☐ ☐	☐ ☐	☐ ☐
ENT	☐ ☐	☐ ☐	☐ ☐
Gynaecology	☐ ☐	☐ ☐	☐ ☐
Medicine	☐ ☐	☐ ☐	☐ ☐
Obstetrics	☐ ☐	☐ ☐	☐ ☐
Ophthalmology	☐ ☐	☐ ☐	☐ ☐
Paediatrics	☐ ☐	☐ ☐	☐ ☐
Psychiatry	☐ ☐	☐ ☐	☐ ☐
Surgery	☐ ☐	☐ ☐	☐ ☐
Occupational/Environmental causes of disease	☐ ☐	☐ ☐	☐ ☐

Skills

	not at all	partly	completely
Clinical examination	☐ ☐	☐ ☐	☐ ☐
BP assessment	☐ ☐	☐ ☐	☐ ☐
Venepuncture	☐ ☐	☐ ☐	☐ ☐
Ophthalmoscopy	☐ ☐	☐ ☐	☐ ☐
ENT examination	☐ ☐	☐ ☐	☐ ☐
Vaginal examination	☐ ☐	☐ ☐	☐ ☐
Cervical smear	☐ ☐	☐ ☐	☐ ☐
Paediatric examination	☐ ☐	☐ ☐	☐ ☐
Rectal (prostatic) examination	☐ ☐	☐ ☐	☐ ☐
Breast examination	☐ ☐	☐ ☐	☐ ☐
Male genital examination	☐ ☐	☐ ☐	☐ ☐
im/sc injection	☐ ☐	☐ ☐	☐ ☐

Consultation skills (generic)

	not at all	partly	completely
Considering the structure	☐ ☐	☐ ☐	☐ ☐
Conducting the interview	☐ ☐	☐ ☐	☐ ☐
Collecting the information	☐ ☐	☐ ☐	☐ ☐
Conducting the examination	☐ ☐	☐ ☐	☐ ☐
Creating a rapport	☐ ☐	☐ ☐	☐ ☐
Constructing a response	☐ ☐	☐ ☐	☐ ☐
Closing the interview	☐ ☐	☐ ☐	☐ ☐

Consultation skills (specific)

	not at all	partly	completely
Occupational history	☐ ☐	☐ ☐	☐ ☐
Sexual history	☐ ☐	☐ ☐	☐ ☐
Breaking bad news	☐ ☐	☐ ☐	☐ ☐

Needs assessment 2 (End of block)

Please complete each statement with a x in the appropriate box

I am satisfied with my ability in the area of:	not at all		partly		completely	
	☐	☐	☐	☐	☐	☐

Clinical knowledge

	not at all		partly		completely	
Dermatology	☐	☐	☐	☐	☐	☐
ENT	☐	☐	☐	☐	☐	☐
Gynaecology	☐	☐	☐	☐	☐	☐
Medicine	☐	☐	☐	☐	☐	☐
Obstetrics	☐	☐	☐	☐	☐	☐
Ophthalmology	☐	☐	☐	☐	☐	☐
Paediatrics	☐	☐	☐	☐	☐	☐
Psychiatry	☐	☐	☐	☐	☐	☐
Surgery	☐	☐	☐	☐	☐	☐
Occupational/Environmental causes of disease	☐	☐	☐	☐	☐	☐

Skills

Clinical examination	Seen	Done	Demonstrated	Signed
BP assessment				
Venepuncture				
Ophthalmoscopy				
ENT examination				
Vaginal examination				
Cervical smear				
Paediatric examination				
Rectal (prostatic) examination				
Breast examination				
Male genital examination				
im/sc injection				

Consultation skills (generic)	Seen	Done	Demonstrated	Signed
Considering the structure				
Conducting the interview				
Collecting the information				
Creating a rapport				
Constructing a response				
Closing the interview				

Consultation skills (specific)	Seen	Done	Demonstrated	Signed
Occupational history				
Sexual history				
Breaking bad news				

ABERDEEN UNIVERSITY
COMMUNITY COURSE (ME 1507) 2000 - 2001

Poster Presentation: Guidance for Peer Assessment

Assessor: _____   **Group: _____**

Give each of the other members of your group a mark out of 20 according to your assessment of that student's individual contribution to your group's poster. In making your assessment, please consider the Marking Scale shown and the following criteria*:

- planning and facilitating group work
- providing ideas and support
- doing one's share
- doing one's share on time
- information gathering
- interpretation of information
- preparation of visual aids
- co-ordination of presentation
- working towards the team

*each student will not be expected to have contributed to all of the criteria

Marking Scale

Descriptor	Mark
Excellent	20 19 18
Very Good	17 16 15
Good	14 13 12
Adequate	11 10 9
Inadequate	8 7 6
Absent or negative contribution	5 4 3 2 1 0

Student	Mark (0-20)

FEEDBACK ON ORAL PRESENTATION OF PATIENT STUDY
(EDINBURGH Year 2)

_____   _____

	EXCELLENT ATTAINMENT OF CRITERIA	COMMENTS FROM TUTOR AND FELLOW STUDENTS	FAILURE TO ATTAIN CRITERIA

CONTENT

	EXCELLENT ATTAINMENT OF CRITERIA	COMMENTS FROM TUTOR AND FELLOW STUDENTS	FAILURE TO ATTAIN CRITERIA
Introduction	clear, concise & focused to set the scene.		rambling, confused, poorly focused.
History Examination	content demonstrates thorough grasp of the patient's clinical details.		poor selection of information, some aspects of the history ignored, significant gaps in examination.
Ideas Concerns Expectations	appropriate empathy for the patient, accurate presentation of his/her ideas, concerns & expectations.		unaware of patient's perspective, poor grasp of patient's ideas, concerns and expectations.
Diagnostic Summary	identifies all significant problems - physical, psychological and social aspects, logical differential diagnosis proposed.		omits significant problems, no attempt to categorise problems. differential diagnosis absent, illogical or seriously deficient.
Explanation & Advice	appropriate language, factually correct, logical management plan, addresses patient's agenda, negotiates way forward with patient.		inappropriate language, unclear or incorrect, lack of clear management plan, does not address patient's agenda, patient's co-operation not sought.

PRESENTATION

Overall quality	spoken, clearly audible, good pace, well organised, logical sequence, appropriate body language.		read presentation, too fast / slow, disorganised, difficult to follow and learn from, distracting body language.
Visual Aids (if appropriate)	easily visible, properly labelled diagrams, enhance the quality of the presentation.		difficult to read, poorly labelled diagrams, add little to the presentation.
Answering questions	able to answer questions and discuss.		unable to answer questions.

(Please ask GP tutor to delete as applicable and sign at the end of the presentation session)

<u>**OVERALL:**</u> **COMPETENT / NEEDS MORE PRACTICE**   **SIGNED:** _____   **DATE:** _____

Outcome 12   Aptitude for personal development

(1)   Self-awareness
Identify your own strengths and weaknesses in relation to your clinical practice at the end of each year.

Year 2

Year 3
Consider how you have addressed any weaknesses in Year 2.

(2)   Career Choice

Briefly describe any current thoughts on career choice (these may not change from year to year).

Year 2

Year 3

(3)   Self-learner

Being a self-learner requires you to take responsibility for your own learning. Briefly detail how best you learn and how you take responsibility for your learning.

How you learn

Year 2

Year 3

How you take responsibility for your learning (e.g. briefing of staff regarding ward teaching)

Year 2

Year 3