

# How are multi-compartment compliance aids used in primary care?

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**AIM** • To determine the scale of dispensing in compliance aids to patients at home, how community pharmacists provide this service and the extent to which patients' needs are met.

**DESIGN** • Self-completion questionnaire to contracted pharmacies, administered questionnaire to 10 randomly selected community pharmacists and administered questionnaire to patients using a compliance aid at home.

**SUBJECTS AND SETTING** • The study was conducted in the Leeds Health Authority area. Pharmacists were interviewed in their community pharmacies and patients in their homes.

**RESULTS** • Responses were received from 123 pharmacies (80%), of whom 95 (77%) supplied 1,328 patients with a multi-compartment compliance aid (MCA). Most commonly used were the Nomad (694; 52%), Dosett (363; 27%) and Medidos (116; 9%). 7 of the 10 pharmacists interviewed required 7 day prescriptions and 8 paid for the aid themselves. 5 would make an initial visit to assess patients and 8 supplied their preferred device without reference to the patient. 1 had a written procedure and in 2, an unqualified assistant filled the devices. In 4 pharmacies delivery

was by a non-qualified person. Of the 169 eligible patients, 56 patients were interviewed (33%). In total 48 (86%) had no input into ordering their prescription and had their device delivered by the pharmacy. The names of their medicines were not known by 38 (68%) and 10 (18%) said they had difficulty using the device; 22 patients (39%) thought they would be able to remember to take their medicines if still in conventional containers.

**CONCLUSION** • Large numbers of patients living at home have their medicines in an MCA, but initiation and supply appears not to be focused on their needs. MCAs can take away a key link between the patient and their health professional. They can also cause patients to lose some responsibility for their own medicines. Before supply, an assessment should determine individual needs and the appropriate intervention — supply of an MCA is only one option. Lack of a payment mechanism makes the need for appropriate targeting urgent; pharmacists are expected to provide the service without support or resources, placing a strain on inter-professional relationships. An evidence-based mechanism for use, targeting those who really need an MCA, should be sustainable through implementation of medicines management, as a result of the NHS National Plan.

Multi-compartment compliance aids (MCAs) are widely used for patients perceived as having problems with medicine taking at home. The aids hold seven days of a patient's medicines in 28 inner compartments, four for each day. They appear to be accepted by many health care professionals as a solution for patients having problems managing their medicines at home. This is despite there being little evidence for their effectiveness.<sup>1,2</sup> A recent development is that traditional MCAs (such as Dosett and Medidos) have been overshadowed by monitored dosage systems (MDSs) which, although initially designed for institutional use, are also promoted for use by patients in their own home.<sup>3</sup> The main advantages and disadvantages that have been associated with the use of MCAs are described in Panel 1.

**What is the evidence?** The most commonly used and studied MCA is the Dosett (known as Mediset in the United States) and it has been the subject of a number of trials with conflicting results. Some have been reported as being little more than a collection of anecdotal reports,<sup>1</sup> others have included too few patients to detect

statistical significance<sup>4</sup> and one author concluded that it was only of limited value.<sup>5</sup> Some workers have found that the Dosett is rarely suitable for the elderly<sup>6</sup> and Atkin<sup>7</sup> found that 24 per cent of elderly patients could not open a Dosett box. Crome *et al*<sup>8</sup> found no significant improvement in the compliance of elderly patients who used the Dosett device. There have been more rigorous trials of MCAs when used as part of a multiple intervention in the US.<sup>9,10</sup> However it is difficult to assess the individual roles of the various interventions employed. In the latter study, only half of the patients were still using the Dosett after six months.

Some work has compared various MCAs, mostly using a criterion of patient acceptability. Wheel-based devices appear least popular<sup>11</sup> and Walker's series of studies found the Medidos most popular over-

all,<sup>12-14</sup> although in one study 35 per cent of patients could not remove the tablets "quickly, with ease".<sup>11</sup> A trial of the Dosett and Medidos devices in a self-medication scheme was unsuccessful because of the difficulty patients had in opening the devices.<sup>15</sup> Sweeney *et al* found the Medidos "extremely useful" in selected patients (although it had been incorrectly refilled by two patients).<sup>16</sup> A *BMJ* review<sup>17</sup> of compliance aids for the elderly included no critical analysis of their role or effectiveness.

There are few published controlled studies of the use of MDSs as compliance aids. A study in 1982 of a system with some similarities to an MDS showed the same level of compliance as with patients using ordinary bottles.<sup>18</sup> However, initiatives have been undertaken locally in the UK, with systems set in place by health authorities to use MDSs as compliance aids in this way.<sup>19,20</sup> Ryan-Woolley recently researched the use of an MDS to monitor medicines wastage and facilitate concordance.<sup>21</sup> Tablet counts in two studies in the 1980s appeared to show improved compliance rates in elderly patients. However, the authors concede that removal of doses before repeat prearranged visits may have

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occurred (the visual nature of an MDS or MCA makes such adjustments more likely than with conventional containers).<sup>22,23</sup> There are no published comparisons of patient acceptability between MCAs and MDSs.

**What are the alternatives?** There are a number of alternative strategies for tackling unintentional non-compliance, some of which have a wider evidence base. Patients with unintentional non-compliance usually need help with:

- 1 Knowing when to take doses
- 1 Remembering to take doses
- 1 Coping with a complex regimen

The key approaches are simplification and rationalisation of the medicine regimen, cueing of doses and tailoring regimens,<sup>24</sup> medicine reminder charts,<sup>25,26</sup> and various memory aids.<sup>27</sup> These are described in Panel 2.

**Why do this study?** The scale of use of MCAs is not known and methods of providing a service through community pharmacists have not been described in detail. MCAs may be useful for some patients, but the appropriate method for targeting is not known.

The report "From compliance to concordance" confirmed the need for research into interventions which address unintentional non-compliance, including compliance aids.<sup>28</sup>

This study investigated the role of these aids in the wider picture of compliance support interventions and how their use can be targeted. The objectives were to:

- 1 Ascertain the current scale of dispensing of medicines in MCAs to patients living in their own homes in the Leeds Health Authority area
- 1 Determine how community pharmacists provide this service
- 1 Assess the needs of patients receiving medicines in MCAs and whether these were being met through their current medical and pharmaceutical care

We have adopted the term "multi-compartment compliance aid" to differentiate between devices designed to contain tablets and capsules from those which assist in the administration of non-oral dose forms, eg, eye-drops and inhalers. Both types of device have been referred to as "compliance aids". We chose to continue to use the term "compliance" in this report, rather than "adherence", due to the historical use of the former in relation to such aids.

## METHODS

There were three phases to the study:

**Self-completion pharmacy questionnaire** A self-completion questionnaire was sent to all 152 contracted pharmacies in Leeds and asked:

- 1 Did they dispense medicines in MCAs to people living in their own homes?

## Panel 1: Proposed advantages and disadvantages of multi-compartment compliance aids

### Advantages

- 1 Some at-risk patients on multiple medication may be able to be cared for at home
- 1 Patients who are generally alert but on complex regimens may be helped
- 1 May allow administration of medicines by carers (formal or informal) otherwise prepared (or allowed) to give medicines
- 1 Act as a reminder to patients who frequently forget to take doses of medicines

### Disadvantages

- 1 The patient loses some responsibility for their medicines
- 1 The MCA may be filled incorrectly by a non-professional
- 1 Many dose forms are unstable outside their original packaging
- 1 Many dose forms cannot go into an MCA, eg, inhalers, liquids, drops
- 1 No recognised payment system for supply or filling
- 1 Cost (of device, and for professional refilling)

### Comment

- 1 Could prevent the need for admission to hospital (or nursing or residential home)
- 1 Such practical assistance may be effectively provided by a reminder chart
- 1 Can result in a process focused on the needs of the carers, rather than those of the patients
- 1 There are other simpler methods such as reminder charts

### Comment

- 1 May be inevitable in some patients with poor mental state
- 1 Already happens with transfer between bottles in the home
- 1 Unclear whether of real significance in short term
- 1 Such dose forms often constitute a significant part of a patient's regimen
- 1 Can lead to inter-professional dispute and misunderstanding in an area where a multidisciplinary approach is essential
- 1 Cost-effective analyses need applying to determine optimum use

## Panel 2: Interventions to support patients having problems with unintentional non-compliance

### Regimen rationalisation/simplification

Before other interventions, make the regimen as simple as possible.

Reduce the number of medicines to a minimum and dose frequencies to once or twice daily where possible.

### Tailoring regimens and cueing doses

Tailoring dose-taking times to fit in with a patient's daily routine can be helpful.

Doses can also be linked to events in patients' daily routine, eg, meal times and bedtime. This helps the patient to remember to take their doses.

### Medicine reminder charts

Essentially two-dimensional MCAs which show what medicines to take at each dose taking time, but with the medicines remaining in their separate containers. Studies have shown that such charts can improve knowledge and compliance. They both help in general understanding of a complex regimen and act as a reminder or cue.

### Memory aids

These include telephone reminders, timed alarms, refrigerator stickers, etc.

- 1 How many patients received their medicines in MCAs?
- 1 Which device(s) did they use?

**Administered pharmacist questionnaire** An additional questionnaire was sent to 10 randomly selected community pharmacists who responded to the self-completion questionnaire and said that they provided medicines in MCAs. Before randomisation, the pharmacists were divided into groups depending on the number of patients receiving medi-

**TABLE 1: WHO MAKES THE DELIVERY OF THE MULTI-COMPARTMENT COMPLIANCE AID**

Who makes delivery	Number of pharmacies
Driver	3
Pharmacist	2
Pharmacist or driver	2
Pharmacist or relative	1
Pharmacist or pharmacy assistant	1
Pharmacy assistant	1

**TABLE 3: NUMBER OF PATIENTS USING EACH TYPE OF MULTI-COMPARTMENT COMPLIANCE AID (N=56)**

Type of MCA	Number of patients
Dosett	20
Nomad	19
Medidos	6
Venalink	7
Manrex Sun & Moon	4

**TABLE 2: PATIENT DEMOGRAPHIC DETAILS (N=56)**

<b>Sex</b>	Female/male	38/18 (68/32%)
<b>Age in years</b>	Mean (range)	78.5 (46-93)
<b>Housing</b>	Own home	43
	Sheltered	11
	Warden controlled	2
<b>Living arrangements</b>	Alone	40
	With partner	12
	With relative/friend	4
<b>Support services</b>	Home care	40
	District nurse	8
	Relative/friend who visits	4
	No help	9

cines in MCAs from the pharmacy, ie, 1-10, 11-20, 21-30, over 30. Four were randomly selected from the first group, three from the second, two from the third and one from the fourth group (to help get a balanced picture across the spectrum of community pharmacies). The pharmacies were seven small independents (up to three shops), one from a small independent multiple and two from large multiples. The population served by these pharmacies was varied, ranging from inner city to the rural suburbs. Of the pharmacists involved, six were proprietors and four were employees.

The questionnaire was designed to answer the following questions:

- 1 Who requests the dispensing of medicines in MCAs for patients living in their own homes?
- 1 What method of assessment of the patient does the pharmacist use?
- 1 What verbal advice and information does the patient receive?
- 1 What procedures are in place in the pharmacy for dispensing in MCAs and is there a written protocol?
- 1 Did the pharmacists have any concerns about dispensing in MCAs?

**Administered patient questionnaire** All patients with MCAs supplied and filled by the 10 selected pharmacies were contacted by letter to seek consent and then by telephone to arrange a home visit.

A questionnaire, based on a previously validated questionnaire,<sup>29</sup> was designed to be used by the research pharmacist when interviewing patients in their own homes. The questionnaire was designed to answer the following questions:

- 1 Did the patient know the names of, and indications for, their medicines?
- 1 Could the patient manage to use the

MCA correctly and did they receive any assistance?

- 1 How did the patient obtain repeat prescriptions from the GP and further supplies of medicines?
- 1 How did the patient feel they would be able to manage if they did not have the medicines in an MCA?
- 1 How did the patient feel the MCA compared with medicines in ordinary bottles and packs?

Approval was obtained from Leeds Health Authority/United Leeds Teaching Hospitals Research Ethics Committee. A copy of the questionnaire is available on request from the authors.

## RESULTS

**Self-completed pharmacy questionnaire** We received completed questionnaires from 123 of the 152 contracted pharmacies (80 per cent). Of these, 95 (77 per cent) dispensed medicines in MCAs to patients in their own homes. The total number of patients receiving their medicines in MCAs was 1,328 (average of 11 per pharmacy, range 1-70).

Most common was the Nomad (an MDS) which was used by 694 patients (52 per cent), followed by the Dosett with 363 (27 per cent) and Medidos 116 (9 per cent). Overall, 819 patients (62 per cent) were using an MDS, rather than a conventional MCA. Preliminary results for this questionnaire have previously been reported.<sup>30</sup> There were 28 pharmacies (23 per cent) which did not dispense in MCAs to patients living independently in the community. The reasons stated included: no demand (11); no remuneration (6); would dispense if given seven-day prescriptions (1); pharmacy not suitable (insufficient space) (1); no reason given (9).

## Administered pharmacist questionnaire

The 10 randomly selected pharmacists ranked general practitioners (GPs) and hospital staff as the main initiators of requests for an MCA, closely followed by carers and social services' staff. The pharmacists rated themselves as being the least likely to initiate use of an MCA.

Seven pharmacists always requested seven day prescriptions from the GP and would not proceed if the GP refused. One would ask, but if refused would dispense in the MCA anyway. Two pharmacists requested 28-day prescriptions and dispensed four by seven days to the patient at one time. Six pharmacists stated that they would order the repeat prescriptions themselves (with the patient's approval) but two preferred the patient to order their own repeat prescriptions. In eight cases the pharmacy paid for the MCA. Two pharmacists stated that they did, on occasion, receive payment for the MCA from the patient.

Five pharmacists said they would make an initial visit to assess the patient before setting up the service and seven said they would check the patient's ability to use the MCA. Eight said that they would provide information and advice to the patient on first supply, but only one would suggest simplification of the regimen and assess patients' progress in conventional containers first. Eight of the pharmacists decided on the type of device without reference to the patient and each had a preferred MCA (six were MDS).

Seven pharmacists stated that they would check the stability of drugs in an MCA. Sources quoted for information were:

- 1 Pharmacist's own knowledge
- 1 Manufacturer's literature or Data Sheet Compendium
- 1 British National Formulary
- 1 Royal Pharmaceutical Society information

Three said that they did not think there was a problem, considering the short length of time the drugs were in the MCA.

One pharmacy had a written procedure in place, although most kept a file with the names of the patients receiving their medicines in MCAs. Two pharmacists always filled the MCAs themselves with five sharing the task with either a qualified dispenser or an unqualified assistant. In one pharmacy dispensing was always carried out by a qualified dispenser and in two by an unqualified assistant. The pharmacists who always filled the MCAs themselves did not get anyone to check them; in the other cases the pharmacist checked the dispensers' work. However, half of the pharmacists had concerns on the ability to check dispensing into MCAs properly. The average estimated time taken for dispensing a seven-day supply was 15 minutes on the first occasion, and six minutes on subsequent occasions. In four of the pharmacies, the MCA was delivered by a non-qualified person (Table 1).

Four pharmacists said there were occasions when they had been pressured by other

health care professionals to supply drugs in MCAs, when they felt this was inappropriate, but that this was not a frequent occurrence.

**Administered patient questionnaire** Of the 169 patients being supplied with a MCA from the above pharmacies, 61 (36 per cent) patients consented to being interviewed and 56 interviews were completed. They had a mean of six medicines in the MCA (range 1–12) and 52 per cent had other medicines not in the MCA. Table 2 shows demographic details of these patients.

When asked who had suggested the use of an MCA, patients' most common response was that it was hospital staff (22; 39 per cent) and GPs (9; 16 per cent). Only one patient said that they had been given a choice of MCA. For 48 patients (86 per cent), the pharmacy ordered their prescription and so the patient had no input. Again 48 patients (86 per cent) had the device delivered by the pharmacy. Most patients were using a Dosett (20; 36 per cent) or Nomad (19; 34 per cent) device (Table 3). All hospital initiated MCAs were the Dosett device.

The names of the medicines in the MCA were not known by 38 patients (68 per cent) and 10 (18 per cent) reported difficulty in using the device; 22 said they thought they would be able to remember to take their medicines if dispensed in conventional containers. A quarter of comments volunteered by patients related to the fact that the MCA allowed them to see if they had forgotten to take a dose. Over 90 per cent (52) said that the MCA was much better than ordinary bottles. However, a subjective assessment by the research pharmacist suggested that three could manage very well, and 26 reasonably well, with conventional containers.

## DISCUSSION

This work suggests that (through extrapolation to Britain as a whole) there are over 100,000 patients living in their own home whose medicines are dispensed in MCAs.

The most widely used device was an MDS (Nomad) rather than a conventional MCA. This may relate to the MDS which individual pharmacies use for supply to residential and nursing homes. The most commonly used MCA was the Dosett, with significantly less use of the Medidos, despite some evidence that patients prefer it.<sup>10–12</sup> Four-fifths of the pharmacists had a preferred MCA, though this was not an evidence-based decision. Only one patient said they had been able to choose the type of MCA. The use of Dosett devices for all those discharged from hospital sometimes led to a change to their pharmacist's preferred device once at home. It appears patients' needs are not the prime criterion for the choice of MCA.

**Lack of payment as a barrier** The main reason given by pharmacists who did not dispense in MCAs was the lack of payment, and this was the most common source of comment during interviews. Seven of the 10 pharmacists would not dispense in an MCA unless

the GP provided seven-day prescriptions. It is clear that the use of such surrogate payments to manipulate the remuneration system is inappropriate and can harm GP-pharmacist relationships. Problems also arise when the patient's local pharmacy will not dispense in MCAs, leading to two pharmacists being used (one for medicines in the MCA and the other, more local pharmacy, for incidental needs), neither with complete records.

### Triggers for supply and patient assessment

It is of note that pharmacists named the GP as the person most likely to request the use of an MCA, along with hospital staff, and saw themselves as least likely to initiate use. This may be a result of pharmacists having a better appreciation of the advantages and disadvantages of MCAs. Training of health care professionals appears to be needed in supporting patients having problems with managing their medicines at home. This should include hospital and social services staff.

Only half of the pharmacists interviewed would visit the patient to assess their suitability for an MCA and only one would try out a simplified regimen first in conventional containers. However, the first question should be: "Is an MCA appropriate or would another option be more appropriate?"<sup>31</sup> Patients' individual needs depend on their motivation, type of regimen, and physical and cognitive ability. As shown in Panel 2, the first goal is to ensure that the patient's regimen is as simple as possible, in traditional containers with appropriate labelling, along with appropriate advice and a reminder chart where necessary. If it is found that such a device is appropriate, then the next question should be: "Which MCA?". In many cases, this process would need a domiciliary assessment.

**Procedures and protocols** Only one pharmacy had a written protocol in place (Royal Pharmaceutical Society guidelines have limited use as they only apply to MCAs supplied to residential or nursing homes<sup>32</sup>). Clinical governance requires that a protocol should be available and it should consist of two parts: patient assessment and dispensing and supply of the MCA.

Drug stability needs clarification, with practical guidance needed for pharmacists on the short-term transfer of medicines into MCAs. There is concern over the ability to check dispensing into MCAs and the use of unqualified assistants for MCAs is open to question. Pharmacists need to audit their dispensing and checking procedures and have clear protocols and documentation in place.

**Low consent rate** The low consent rate for the patient interviews (around one third) limits the wider applicability of these findings. The low rate could have been predicted in this group of elderly patients due to significant numbers of patients too confused to be able to give informed consent and patients who were reluctant to allow a stranger into their homes.

However, the comments of some patients suggested that they had detected an ulterior motive and that someone was "going to try to take their MCA away". This needs to be borne in mind if protocols which promote options other than MCAs are brought into use.

### Patient ownership of medicines and patient-professional contact

Over two-thirds of patients did not know the names of any of their medicines in the MCA. These devices remove the ownership by some patients of their treatment; their medicines become an anonymous collection of variously coloured and sized tablets and capsules which they swallow in one go, at predetermined times. Separate tablets in different bottles help to maintain a link between the patient and their medicines, the patient retaining some responsibility for their own medication.

Most patients had their repeat prescription ordered by the pharmacy and then the device was delivered, frequently by an unqualified person. Thus the patient becomes not only divorced from their medication, but also from the doctor and pharmacist who prescribe and dispense it. In particular, the valuable link between the patient and pharmacist is lost. There is no opportunity for the patient to ask questions or opportunity for the pharmacist to assess patients' changing needs with respect to their medicines. Almost one-fifth of patients said they had some difficulty getting medicines out of the aid. Patients' medicines management needs may have changed after the MCA was initiated — hence the need for continual monitoring. Previous research has shown that housebound patients who rarely see a pharmacist often have a number of medication problems which need resolving.<sup>33</sup>

**Patients' information needs** There was anecdotal evidence of patient and carer misunderstanding of the system for supply. This emphasises the need for precise and detailed information to be given at the beginning. Patients need the following verbal and written information when an MCA is first supplied:

- 1 How to use the aid
- 1 What to do if a dose is missed
- 1 Arrangements if away from the house
- 1 How to get further supplies

**Assessment protocols for MCAs** Over 90 per cent of patients said they preferred the MCA to conventional bottles. For many, the main benefit appeared to be that they could see if they had forgotten to take a dose; apparently a major concern. However, almost 70 per cent still relied on other methods to remind themselves to take their medicines and it was apparent at home visits that some patients or carers leave out tablets on the table for patients to take with their next meal. Others were taking them out to put in other containers. Perhaps for many patients — those who need to check whether they have taken a dose — what is

needed is an aid with just four compartments into which the patient or carer could set out the daily doses each morning. This intervention could be part of a wider protocol to address the needs of patients with problems with unintentional non-compliance.

The research pharmacist's subjective assessment suggested that 29 of the 61 patients would be able to cope well or reasonably well without an MCA. Review of a patient's medicine regimen and consideration of other interventions (as described in Panel 2) needs to be part of a protocol for meeting the needs of patients with problems with unintentional non-compliance.<sup>29</sup> This assessment suggests that the number of patients using MCAs could be significantly reduced through such a process.

**Remuneration** A fundamental problem at the heart of the use of MCAs is the lack of remuneration. For this to be resolved, funders will need to be reassured that MCAs are being properly targeted. The level of remuneration will need to reflect the true time and resource commitment of a properly constituted service, ie, including recommendations made here regarding documentation, patient assessment, and the provision of information and advice. The publication of the National Plan for the NHS, with explicit support for medicines management and new methods of remuneration for pharmacists, is an opportunity to address this issue.<sup>34</sup>

**Limitations** The questionnaires to the pharmacists depended on accurate self-reporting of their behaviour. It is possible that there was some over-reporting of the extent to which measures were in place to ensure appropriate use of MCAs. The results should therefore be taken as the most optimistic picture of the current situation.

The low consent rate to the patient interviews needs to be taken into account when looking at these responses. Some of the non-responders would undoubtedly be among the most vulnerable and most in need of monitoring and support for their medicine taking.

**Future work** This study has laid the foundations for further research into MCAs. Key questions are:

- 1 How acceptable are MDSs as devices for use by patients in their own homes?
- 1 Which MCA (including MDSs) do patients prefer?
- 1 Could a "single-day" MCA (filled by the patient or carer) be sufficient for those patients who just need reminding whether they have taken a dose?
- 1 How do MCAs, MDSs and other interventions, eg, regimen simplification, reminder charts and single day MCAs compare (through randomised controlled trials)?

It is important that any such studies are independent of the manufacturers of the

aids. Developmental work that needs to be done includes:

- 1 Testing of a protocol for intervening when patients have problems with unintentional non-compliance (The full range of non-MCA interventions should be considered and it should include a role for all stakeholders, [including hospital and social services].)
- 1 Guidelines for dispensing and supplying MCAs to patients at home (These should preferably be an extension of current Royal Pharmaceutical Society guidelines for residential and nursing homes. They should dovetail with the above assessment protocol, once a decision has been made to supply an MCA and should cover personnel, premises and equipment, production and procedures, method of supply and advice to the patient.)
- 1 A practical guide to which medicines can be placed in an MCA for up to four weeks
- 1 Development of a written guide for patients using an MCA

#### CONCLUSION

Health professionals need to know the place of MCAs in the wider context of medicines management for patients at home. The place of each intervention (including MCAs) needs determining, so that each can be targeted to those who would most benefit. Pharmacists need criteria to ensure that MCAs are only used when appropriate, and they need evidence on which to base their recommendation. If an MCA is the appropriate intervention, then evidence-based protocols are needed for the choice of MCA and the dispensing and supply of the device. The cost of filling and supplying MCAs, lack of a payment mechanism and the complications that arise from their use in practice make these needs more pressing.

It is of concern that over 100,000 patients living independently in the community in Britain are using MCAs, despite the lack of good evidence that such devices are effective.

Patients are receiving the devices largely without any assessment of whether their use is appropriate in their case. There is no proper referral or assessment mechanism between primary and secondary care. It

seems that the process is focused on the needs of professionals and carers and not on the patients' needs. This is in direct conflict with the concept of concordance in medicine-taking,<sup>23</sup> which is based on patients playing a full role in decisions about their medicines. An assessment of the patients' needs should be the starting point.<sup>35</sup>

Patients must not be issued with an MCA without first being assessed. The assessment should follow standard guidelines which are needed to ensure that all patients receive the intervention and care most suited to their needs. If the assessment indicates that an MCA is the most appropriate option, then the first delivery should always be made by a pharmacist or suitably trained technician. Verbal and written information should include how to use the aid, how to get further supplies and who to ask for further information.

The medicines management problems of many patients currently using MCAs may be able to be managed in another way. Simplification is the key strategy for unintentional non-compliance and may be sufficient on its own to meet patients' needs. MCAs can be useful in some patients, however they must be seen within the wider context of medicines management and pharmaceutical care. It is essential that all primary care professionals, social services and hospital staff are part of a wider managed mechanism.

Pharmacists have been placed in a situation where they are expected to provide a service for MCAs, but without the resources to do it. The current ad hoc mechanism for remunerating pharmacists for supplying and filling MCAs is insupportable and has a negative effect on pharmacist-patient and inter-professional relations. It is unlikely that sufficient NHS resources are available to fund all patients currently using MCAs at home, but an evidence-based mechanism for their use, for the smaller number who really need them, might mean that sufficient funding is available. This needs to be incorporated into the implementation of the medicines management initiatives arising from the NHS National Plan.

**ACKNOWLEDGEMENTS** This work was funded through the Galen Award 1998-99 of the Royal Pharmaceutical Society of Great Britain. We thank all the pharmacists and patients who gave up their time to allow this study to take place.

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