

MONITORED DOSAGE SYSTEMS

By LAURENCE S. SPREY, BSc, MRPharmS



THE philosophy behind a successfully used monitored dosage system (MDS) is quite simply that the right patient gets the right medicine at the right time so as to get the right therapeutic response.

Without doubt, MDSs have been very much welcomed by the care market and also by the authorities that regulate both nursing and residential care homes. They recognise that an MDS enables them to monitor and control the administration of medicines, complying with the appropriate pharmaceutical standards. An MDS is also likely to be

Laurence Sprey is a community pharmacist from Brighton. His pharmacy provides MDSs to several residential and nursing homes.

Monitored dose systems have had an important impact on medicine provision in nursing and residential homes. What is their future?

instrumental in helping homes obtain BS 5750 status by formulating medicine administration procedures.

But many pharmacists consider an MDS to be a proverbial thorn in their sides. Why is this? Quite simply, present National Health Service remuneration is insufficient to enable pharmacists to provide these sys-

tems at no charge. Also, consideration has to be given to the tremendous increased workload that is required for pharmacists to put the medication into the various systems.

IMPACT ON HOMES

However, MDSs have, without doubt, had a major and important impact on the way medicines are dispensed in both nursing and care homes during the past five to six years. The main reasons for this are, first and foremost, that MDSs make drug administration "safer" by eliminating secondary dispensing. That is, homes do not have to decant tablets from their original labelled containers into a various selection of pill pots, ice cube trays, etc, as was common

before the introduction of MDSs.

Secondly, by using an MDS there is a considerable reduction in time taken to conduct the medicine round in the care setting, thereby freeing staff for tasks more directly concerned with patient care.

The undoubted success of MDSs is reflected in the fact that over 60 per cent of care homes in the United Kingdom now use some form of MDS. Boots's MDS and the Nomad cassette system account for the vast majority of these.

ORIGINS OF MDSs

The MDS was developed by an American pharmacist called Rick Berman about 20 years ago in the back of his father's pharmacy in Boston, Massachusetts.

In the United States, nurses had to count the stocks of various medications on each shift change, which was very time consuming. Berman noticed this and went about developing a system which would make the nurses' tasks easier. He packaged medication into blister cards, sometimes known in the US as "bingo cards" or "punch cards."

MDSs first appeared in the United Kingdom in 1989, when Boots launched its Canadian-developed Manrex system — later renamed Boots MDS in the UK.

ADMINISTRATION RECORDS

The most important part of an MDS, whether a blister card or cassette system, is the use of good medicine administration record chart (MAR chart).

The best of these charts are generated on computer in the pharmacy, using three-part paper. The top copy serves as the medication record in the home, while the under copies are used for medication review and reorder. When used properly, MAR charts form the cornerstone of good medication practice in any care setting. Sometimes I find that homes are only given the MDS packaging and not the MAR charts, leaving them to struggle with whatever administration record system they had been using before.

Good MAR charts are a fundamental component of the MDS and perform several important functions.

First, they dramatically reduce the amount of time spent by home staff manually writing out drug charts each month. Secondly, and perhaps most important, they dramatically reduce the potential for the transcription errors normally associated with handwritten documents. Thirdly, when used properly, they are an extremely powerful and important review document. Sadly, the review element is the MAR function that is so often neglected.

MAR charts also allow the home to have a complete audit trail of all medicines coming into the premises, or discontinued medication being returned to the pharmacy.

OTHER BENEFITS

Other benefits of a good MDS include a reduction in drug contamination.

An MDS is also more cost effective for the

government, since research has shown that it leads to less medication being wasted or ordered unnecessarily. It also allows staff greater security — any potential theft or misuse of drugs is more easily detected.

PROBLEMS

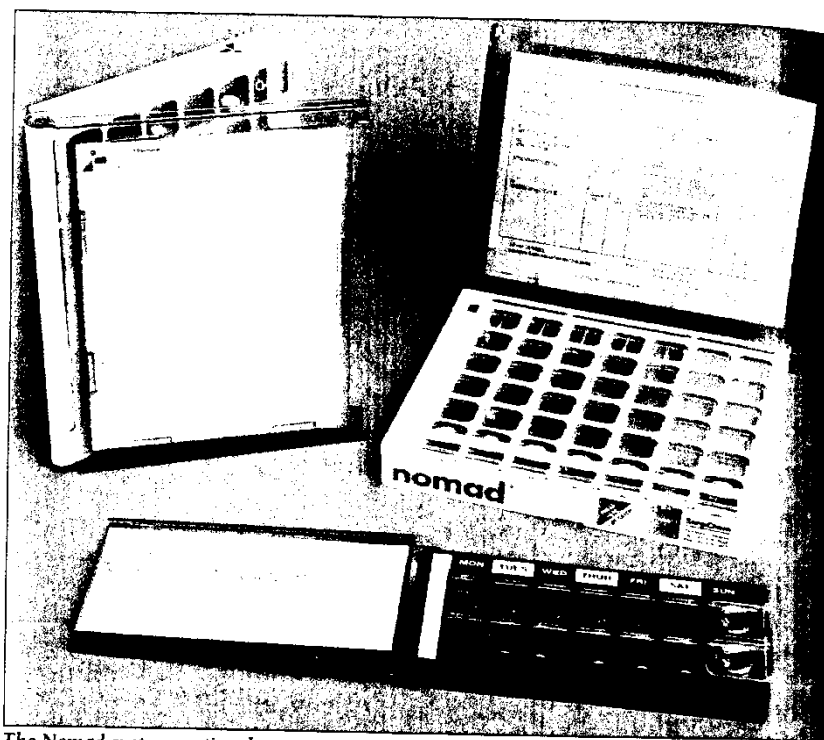
While MDSs have been extremely beneficial for many homes, one must remember, and take into consideration, that they may

not be ideal for every type of care setting.

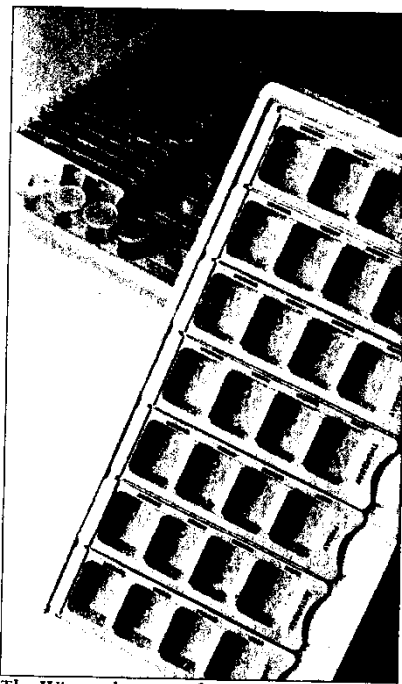
In my own practice, we have found that an MDS is not ideal for short stay patients or where there are frequent changes in the doses of a patient's medication.

Another reason why a home may not be able to get on with a system is because of the lack of training and support for the home staff by the supplying pharmacist.

Manufacturers of the various systems available often find that a matron or a



The Nomad system: optional extras now available



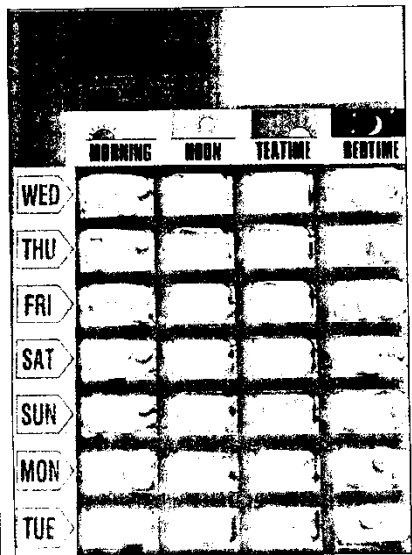
The Wiegand system: from W & W Medsystems — another cassette MDS



The Venalink card (in green) among a selection of systems

[illegible]

A medicines administration record chart — “the most important” part of an MDS — reduces the potential for transcription errors



The Manrex system — now the Boots MDS

community services pharmacist will contact the company to complain about some aspect of their system which, upon investigation, turns out to be the fault of the pharmacist who has not installed a full system, or who has omitted one of the most vital components — training and commitment.

In my own pharmacy, we have recognised the need for training and are deeply committed to a comprehensive educational pro-



Residents can self-medicate with an MDS

gramme. We fully train all home staff, either individually or in small groups, using audio-visual techniques to get the message across.

One of our pharmacists will go into the home to provide hands-on training and assistance for smooth transition when a home converts to an MDS. Most importantly, follow up visits are made to ensure that the system is being used correctly and, of course, successfully, and that the home staff

- fully understand all aspects of the system. This in-home training programme is carried out in addition to the advisory visits that the pharmacist makes under the residential homes payment scheme. The amount of pharmaceutical input required in each home varies enormously.

WHAT IS AVAILABLE?

Over the last few years, systems have come and gone and some have even changed names. There are still basically two types of system on the market — the blister foil pack and the rigid cassette type.

Cassette MDSs Two cassette-type products are available — Nomad and Wiegand.

Both require all the medicines for a particular dosage time to be placed in one compartment. Many home owners like this because it means that the care staff can simply tip the relevant tablets or capsules out at the appropriate dosing time.

Both companies offer computer software that enables the pharmacist to label the cassettes in a way that allows different medicines to be recognised. Nomad now comes with optional extras such as plastic seals for the trays, dividers for the compartments and tamper-proof adhesive strips, but these all add to the cost.

Foil and blister systems The other type of MDS in use is the foil and blister type.

Boots still supplies its own MDS and will supply any pharmacist who wishes to purchase this, either directly or through major wholesalers.

Recent changes include improved dividers and reminder cards, which are now plastic, and look better than the old card versions.

With the Boots system, foil blisters are enclosed in an outer plastic frame, which is reusable.

The Venalink system is similar to the Boots system but comprises a completely disposable pack. The foil/blister is supported by card as an integral part of the pack. (Venalink has just introduced a cold-seal system aimed at low volume users.) In our pharmacy, we have designed our own packs which are based on a 28-day cycle and we pack one drug per blister. Other disposable systems on the market include the Park-Pak system and the Compliapack.

CUSTOMER SATISFACTION

The underlying reason that homes like monitored dose systems is the amount of time they save. One matron I spoke to was profuse in her praise, saying that her morning medicine round used to take two hours and now takes her 45 minutes. Her later rounds were reduced by 30 minutes. This saving amounts to about 20 hours per week for an 18-bed home. This is an enormous benefit for the home — more than half a full time equivalent salary — so who can blame the home staff for accepting MDSs with open arms.

Many homes are now demanding MDSs

from their pharmacists. Much of the time that is saved by the home is, in fact, transferred to the pharmacy.

INTO THE FUTURE

A further important development has been the introduction of domiciliary dosage packs for self-administration.

The demand for these packs is definitely going to escalate under the auspices of the Community Care Act. They are likely to be of great benefit for patients at home, those in sheltered accommodation and anywhere else where patients retain responsibility for their own medicines.

The potential for the use of a modified MDS in the community is enormous where these packs are prepared in the pharmacy under the supervision of a pharmacist. The development of MDS will continue, as will the demand for pharmacists to become more involved in providing in-home training and reviewing patients' medication on a regular basis. This will result in the pharmacist working more closely with both homes and doctors.

One of my pharmacy's future goals is to reduce the amount of unnecessary medication which patients take. This is very obvious in many of the homes which we service. Regular review by the doctor and pharmacist could result in a reduction in patient medication. This would reduce both drug costs and potential drug-related problems, which are very common in the elderly.

Recent research in Brighton has shown that 20 per cent of all hospital admissions of the elderly are due to drug related problems.

THE WAY FORWARD

Pharmacists providing a comprehensive service to the homes that they supply might typically offer a delivery service, packaging, MAR charts, treatment plans, staff training and pharmaceutical advice. These services have been provided to the homes at no charge as pharmacists have, in the past, been able to finance these from the remuneration payments made by the NHS.

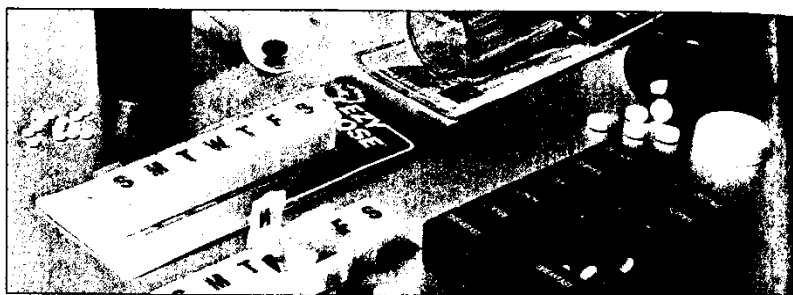
However, due to the demise of on-cost, which has led to a substantial reduction in NHS remuneration to community pharmacist contractors, the provision of MDS at no charge to the home market is now unsustainable.

Rather than cease to provide the homes with what we believe to be an excellent and quality pharmacy service, my own pharmacy is now offering a choice of service levels from which the home can select according to their own requirements. We now charge for providing an MDS service.

Of course, many of the homes that we used to supply have gone elsewhere since some pharmacists still believe they are able to provide this service at no charge.

The development of specialist pharmacy practice will continue and offer even greater benefits to both patients and homes in the future. However, I believe the profession should decide on a realistic fee for a quality MDS service.

Compliance aids



Compliance aids for patients can help if used with thought

MANY compliance aids are available for patients to use themselves — some more sophisticated or complicated than others. They are usually based on some type of daily dose reminder and may feature an alarm clock mechanism.

A recent, small study by community services pharmacists indicates that, for many patients, compliance aids make self-administration of medicines easier, and give patients greater independence.

The study, from Ealing, Hammersmith and Hounslow health agency (*PJ*, September 24, 1994), identified problems patients encountered with original medicine containers, including difficulty in opening and closing them, difficulty in remembering to take a large number of tablets or taking them at their correct time, and problems reading labels or understanding directions.

Eight of 11 patients said that changing to a compliance aid had made it easier for them to take their tablets. Reasons given for this were that all tablets for one dosage time were in one compartment, the aid was easier to open than bottles. The aids also reminded patients when to take their tablets and alerted them if tablets had been missed.

But the issue of using compliance aids is not as simple as it might seem.

From a practical viewpoint, there needs to be someone reliable to fill an aid. If an able relative is not willing to take on the task who will help? Liability issues may prevent care workers from being involved.

There is also the question of ability. A compliance aid will only help a patient who can see and handle the device properly. In addition, short term stability data for medicinal products in compliance devices is not always available.

If a patient does not want to take his or her medication, a compliance aid will not help. There is also a possibility that such a device removes responsibility from the patient.

A study involving 222 patients, suggested that the device selected was important. It found that the Medidos was the most popular device of seven tested

(*PJ*, September 29, 1990, pR1).

For many patients, especially the elderly on a multitude of drugs, a great aid to compliance is a medication review leading to a reduction in medicines. Another effective approach, and one of the simplest, is a medicine reminder chart. This lists the patient's tablets, states what they are for, and gives tick boxes for administration times linked with meals and bedtime.

As well as daily dose reminders there are aids to help open bottles and packs, pill splitters and crushers, devices to help patients take liquid doses and to use eye drops. The National Pharmaceutical Association has produced an information leaflet, "Aids to patient compliance". It lists available devices, with their capacity in terms of both days and compartments, and gives a list of suppliers. It is free to members from the association's information department. The leaflet costs £5 for non-members.

The Centre for Pharmacy Postgraduate Education has recently published a distance learning pack, "Patient compliance — keep taking the tablets". This includes the NPA leaflet as an appendix. The pack discusses what compliance is, why patients are non-compliant and how pharmacists can help. Community pharmacists in England can place orders for a free copy on the CPPE order line given below, giving their names and Royal Pharmaceutical Society registration numbers.

The CPPE distance learning pack, "The home away from home" also deals with compliance aids and monitored dose systems. It advises on providing pharmacy services to homes and can be ordered from the centre — *By Naomi Kempner (on The Journal's staff).*

CONTACT POINTS

● National Pharmaceutical Association, Mallinson House 40-42 St Peter's Street, St Albans, Hertfordshire AL1 3NP. Tel 01727 832161, fax 01727 840858.

● Centre for Pharmacy Postgraduate Education. Tel 0161 237 2058, fax 0161 236 2598.