

# ONE-STOP DISPENSING, USE OF PATIENTS' OWN DRUGS AND SELF-ADMINISTRATION SCHEMES

*In this article, the Hospital Pharmacists Group discusses the implementation of schemes for one-stop dispensing, use of patients' own drugs and self-administration, and suggests some appropriate guidelines*

**P**harmacy in the future — implementing the NHS Plan<sup>1</sup> sets out the future direction for the development of hospital pharmacy services in England. One of its main points is that services should be redesigned around patients.

This article is concerned with facilitating implementation of three of the services outlined in Pharmacy in the future. These are:

- One-stop dispensing (also known as dispensing for discharge)
- Use of patients' own drugs (PODs)
- Self-administration schemes

While focusing specifically on topics in the report for England, similar recommendations for revision of inpatient medication supply are made in the Task and Finish Group on prescribing in Wales.<sup>2</sup> In Scotland, introduction of these schemes was recommended in a draft report from the Association of Scottish Trust Chief Pharmacists (March 2001) and has now been incorporated into The right medicine: a strategy for pharmaceutical care in Scotland, which was published last month by the Scottish Executive.<sup>3</sup>

Another push for introduction of these services has come from the recent National Service Framework for Older People,<sup>4</sup> which says that, by 2002, all hospitals should have one-stop dispensing schemes and, where appropriate, self-administration schemes for medicines for older people.

A further driver has been EC legislation requiring patients to receive a patient information leaflet with dispensed medicines. This has hastened the use of patient packs, which is a key part of most one-stop dispensing schemes.

*The Hospital Pharmacists Group is one of four membership groups of the Royal Pharmaceutical Society. Membership of the HPG is open to all pharmacists who are involved in secondary and tertiary care*

## — ONE-STOP DISPENSING

One-stop dispensing refers to the practice of combining inpatient and discharge dispensing into a single supply, labelled for discharge. Medicines are increasingly provided as patient packs, which means that typically, the patient will go home with about three weeks' supply.

## — PATIENTS' OWN DRUGS

Schemes for use of patients' own drugs (PODs) involve patients bringing their medicines into hospital with them, where they are assessed (usually by pharmacy staff) on admission. If the quality is deemed satisfactory, and the medicine is still required, the POD is used during the inpatient stay and on discharge.

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**all hospitals should have one-stop dispensing schemes and, where appropriate, self-administration schemes for medicines for older people**

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For one-stop dispensing and use of PODs to work efficiently, lockable medicine cabinets by the patient's bed are needed. Unless patients are self-administering their medicines, the key to the locker is held by a nurse who administers drugs from the lockers.

## — SELF-ADMINISTRATION

Supply of individually labelled medicines and lockable bedside cabinets have opened the way to greater self-administration of medicines on the ward. These schemes involve assessment (usually by a nurse) of the patient's ability to self-administer and of the education and supervision required for them to become competent to self-administer.

## — IMPLEMENTING THE SCHEMES

At a rough estimate, up to 10 per cent of hospitals currently implement one-stop dispensing and use of PODs. Schemes for self-administration of medicines, on any large scale, are less common. The recent Audit Commission report on medicines management, "A spoonful of sugar",<sup>5</sup> published at the end of last year, included data on current practice.

There is no need for the three schemes to be introduced together, but in practice, some hospitals have done so as part of a sequential programme of change.

The schemes can involve changes in working practices for pharmacists, technicians and nurses. Pharmacists are able to concentrate on clinical activity on the wards, and technicians may also have the opportunity to extend their role on the ward. Nurses administer medicines from bedside cabinets rather than from the drug trolley, and they also generally take responsibility for self-administration schemes.

## — ADVANTAGES

Hospitals that have introduced the schemes report quality improvements as well as possible financial advantages. The advantages are listed below.

**Quicker discharge** One of the most common complaints about hospital pharmacy

services is delay in discharge. A patient may be ready to leave hospital but cannot do so because the discharge medicines are not ready. Use of one-stop dispensing with patient packs (or PODs) labelled for discharge means that most medicines are already on the ward. Faster discharge has advantages for patients, and for hospital bed management.

**Reduced dispensing time** One-stop dispensing saves pharmacy time as dispensing only has to be done once.

**Less rush to see GP** In primary care, the advantage for patients of being discharged with more medicines (eg, a minimum 14 days' medication on discharge) is that they do not have to rush to see the GP for another prescription. In the past, patients have sometimes requested a further supply of medicine before the GP has received the hospital dis-

charge letter, with consequent risk of receiving a prescription for medicines that have been changed in hospital.

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**Drug errors** There are conflicting data on whether drug administration from individual patients' cabinets is associated with reduction in drug administration errors by nurses when compared with use of a drug trolley. In one study,<sup>6</sup> there was no decrease in error rate. However, in another study (unpublished) from Arrowe Park hospital, there was a four-

fold reduction in administration errors with the new system. In this study, nurses commented that with cabinets it was easier to find what they wanted and there was less chance of picking the wrong pack.

**Patient information leaflets (PILs)** Use of patient packs means that the patient has an information leaflet from the start of therapy, rather than after a couple of weeks of tablet taking.

**Reduced wastage** A major advantage in using PODs is reduced wastage. In the past, medicines brought into hospital were often destroyed, to the annoyance of GPs. Alternatively, they were returned to the patient on discharge, along with discharge medication. This was potentially confusing to patients, who may have more of the medicines at home, not all of which may still be required.

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**Use of PODs** Use of PODs means that patients can continue to use brands of medicine with which they are familiar.

**Better drug history** If patients bring their medicines into hospital on admission, it is easier to obtain an accurate medication history.

**Self-administration of medicines** Self-administration allows patients to take their medicines as they would at home, and provides an opportunity to assess their ability to take their own medicines. Ironing out any problems with medication while the patient is in hospital should improve compliance when the patient returns to their own home.

## — GETTING STARTED

The need for a multidisciplinary approach is emphasised by pharmacists who have introduced one-stop dispensing,

PODs and self-administration schemes. Also, most hospitals have introduced the changes gradually, starting with one or two pilot wards.

Queen's Medical Centre, Nottingham, was a pioneer in this area. In 1995, a paper was published describing the hospital's use of PODs and self-administration schemes.<sup>7</sup>

The hospital project team included pharmacists and nurses, plus a hospital consultant (the latter having particular input into the self-administration scheme) and a GP (who was able to sell the idea of using PODs to primary care colleagues). Use of PODs started on medical wards, and was then gradually introduced in the rest of the hospital. The initial one-stop dispensing scheme involved a 14-day supply on admission (and a minimum seven-day supply on discharge). More recently, approval has been given for 28-day supply (giving a minimum 10-day supply on discharge).

At Guy's and St Thomas' Hospital Trust, London, one-stop dispensing and use of PODs is now standard throughout the hospitals. The hospitals' "near to patient" model started in eight volunteer pilot wards.<sup>8</sup> The project was managed jointly by a pharmacist and a nurse. Having a nurse lead the team helped liaison with nursing staff. The project team also made sure that interface pharmacists, GPs and community nurses were kept informed of their plans.

## — IMPLEMENTING PODS

All hospitals have policies for deciding APOD suitability, with the patient's medicines being assessed against specific criteria. However, policies on who assesses the PODs differ from place to place.

At Queen's Medical Centre, Nottingham, pharmacists assess PODs when the patient is admitted. In many hospitals, technicians

check PODs, but there is a shortage of technicians in Nottingham. Also, the hospital says that their experience has demonstrated the importance of pharmacist input on admission, especially on medical wards. As well as checking PODs, the pharmacist is able to detect errors in medical history taken by junior doctors.

At Derbyshire Royal Infirmary NHS Trust, which converted to a system of one-stop dispensing and use of PODs in 1997–98, pharmacist activity is also concentrated on admission wards where they check PODs, review prescriptions and initiate supply of any new medicines.

At Guy's and St Thomas' Hospitals NHS Trust, nurses routinely check PODs (as long as they have had training on the criteria for acceptance), although they are under no obligation to do this and can wait for the pharmacist if they wish.

The experience at the Countess of Chester Hospital NHS Trust, where routine assessment is carried out by technicians, is that although nurses have a protocol for assessing PODs, in practice they often contact the on-call pharmacist or wait until the pharmacy opens if the medicine is not urgent.

Keeping PODs in the traditional drug trolley, rather than in individual patient cabinets, is not practicable. In Chester, PODs were initially administered from the trolley but the nursing staff did not like this system.

The increasing use of patient packs in primary care means that more medicines brought into hospital will be suitable for continued use than in the past.<sup>9</sup>

The proportion of PODs that can be used depends on the strictness of the criteria for acceptance. For example, some trusts will not use blister strips that are not in their original pack while others will use such medicines as long as the blister strips are clearly identifiable. At Essex Rivers NHS Trust, a pragmatic approach is taken and less than 5 per cent of PODs are deemed unsuitable for use. The pharmacists take the view that throwing away medicines can undermine patients' confidence and is generally not necessary. In this trust, PODs are evaluated by pharmacists or technicians or (out of hours) by nurses.

In an audit in Southampton, 22 per cent of PODs were considered unsuitable for use, because they were out of date, out of production or in bottles containing more than one medicine.<sup>10</sup>

**Communication** For PODs schemes to work efficiently, they must be publicised to patients and to primary care staff.

Patients will not be accustomed to taking their medicines into hospital with them, especially since GPs and ambulance staff tend to advise against this because they are aware that under the traditional systems such medicines are often destroyed.

The PODs schemes can be promoted in hospital booklets, in outpatients' departments and through publicity to primary care organisations, GPs, community pharmacists and the ambulance service. Some health authorities have paid for posters to be produced. At Torbay District General Hospital, which is in the process of introducing one-stop dispensing and use of PODs throughout the hospital, there are plans to supply "POD bags" to ambulance staff for them to collect patients' medicines on emergency admissions.

There could be confusion if a patient brings medicines into hospital before their allotted ward has introduced a PODs scheme. This is probably unavoidable if the scheme is being introduced gradually through the hospital, but timing of the publicity does need to be considered.

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Experience has shown that patients are happy to use their GP-prescribed drugs in hospital as long as it is explained that they will get further supplies if necessary.

There is some difference of opinion on storage of Controlled Drugs. Some hospitals believe that CDs can be kept in the patient's lockable cabinet, but most keep them in the ward CD cabinet. Some hospitals will not use CDs brought in by patients.

One area of uncertainty is what to do if the POD label is unclear, or if the dose is changed in hospital. Most hospitals will re-label the packs and continue to use the POD, but require the pack to be marked "Patient's own drug relabelled" (or equivalent) without obscuring the name and address of the original dispenser.

A potential problem with wastage arises with patient packs if the prescription changes during the inpatient stay. One option is to use the opened pack as ward stock (as long as it has only been used for nurse administration and not for patient self-administration).

**Discharge** Having medicines labelled for discharge from the start leads to a reduction

in discharge time. Most of the medicines that patients need to take home are already in the patient's cabinet or can be supplied from ward stock. (Hospitals still keep a small ward stock and prepacks of commonly used medicines.)

The pilot project at Guy's and St Thomas' Hospitals found that on discharge, PODs were used for 19 per cent of items and 61 per cent of items had been dispensed already, leaving only 20 per cent to be dispensed on the day of discharge.<sup>8</sup>

In theory, if all the medicines a patient needs on discharge are already on the ward, pharmacy staff might not need to be involved with the discharge process, but many hospitals do require a pharmacist, or technician, to check medicines before discharge. Cases have been reported of patients being discharged with medicines that they no longer need, or with another patient's medicine that had not been removed from the cabinet when the previous patient left.<sup>11</sup>

Some community pharmacists have had initial concerns about the effect on their prescription volume of longer periods of discharge medication, but have usually accepted that the effect will be minimal. This shows the need for good communication about the details of the scheme.

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## SELF-ADMINISTRATION

A patient's ability to self-medicate tends to be assessed by nursing staff. They are in the best position to make this assessment because they spend more time with patients than do other health care professionals. Pharmacists may also be involved, especially where patients have problems with their medicines and need pharmaceutical advice or, for example, need large-print labels or help with opening bottles. Doctors need to be kept informed about which of their patients are self-medicating.

Protocols generally classify patients into different groups. For example, those unlikely to be able to self-medicate, those too ill at first but likely to self-medicate later, and those able to self-medicate straight away (perhaps with differing levels of supervision). Patients are continually reassessed, with the aim of getting as many as possible who wish to do so, to self-medicate before they leave hospital.

Information charts listing all the different drugs taken, and details of dosage, possible side effects, etc, are given to self-medicating patients in some hospitals.

At present, self-administration tends to be primarily used on long-stay wards or for patients who are not acutely unwell, eg, those on rheumatology wards. One problem is that with the average inpatient stay being less than three days, many patients are not in hospital long enough to be assessed properly.

### **Multidisciplinary approach**

Planning for the introduction of these schemes should be a multidisciplinary process. It must be seen as a joint project, rather than one profession trying to impose changes on another.

### **Gradual start**

Plan a gradual start. Moving from the traditional system, with seven or 14 days' discharge medication, to one-stop dispensing using patient packs may be too big a step to take in one go. One option is to make the change on a gradual basis, perhaps starting with a move to 28-day discharge dispensing while retaining traditional inpatient dispensing, and then moving to one-stop dispensing for discharge.

Most hospitals have started one-stop dispensing and use of PODs schemes with a pilot scheme on one or two wards. This allows staff to get used to new ways of working, and allows accurate costings. The rate of introduction will depend on local factors, including staffing and finance.

### **Storage**

When planning for patient pack dispensing, it is important to remember that extra pharmacy storage space will be needed for patient packs.

### **Medicine cabinets**

Lockable medicine cabinets are essential to the development of these schemes. They can be fixed to the wall or the bedside locker. Fitting to the locker is easier for patients who are self-administering their medicines and also allows the locker and cabinet to be moved if the patient moves to a different bed. Bedside lockers incorporating lockable medicines storage are also available. Cabinets of different sizes might be useful, with larger ones used for wards where patients are likely to have complex drug regimens. Care is needed in placing cabinets and choosing ones which are stable and durable. Positioning of the cabinets will need to be decided in consultation with nursing staff.

### **Supply quantity**

Trust policies vary on how much drug to supply with one-stop dispensing. Some hospitals have not yet moved to 28-day dispensing and might, for example, run one-stop dispensing with 14 days' supply. But the move is towards a 28-day supply on admission.

### **Publicity**

Publicising the POD scheme is essential so that patients know about the scheme and the need to bring their medicines into hospital.

Publicity should also extend to communicating with primary care staff. GPs and community pharmacists need to be informed about policies regarding the use of PODs and the issue of longer periods of discharge medication. For them to encourage patients to take their medicines into hospital, the rationale for the change in policy on PODs needs to be explained so that it is not seen as a hospital cost-cutting exercise but one that has quality benefits.

### **Consent**

Patients have to give consent for use (or disposal) of the medicines they bring into hospital. Some hospitals require written consent. Patients should also be asked to sign that they accept the conditions associated with participation in the self-administration scheme.

### **Endorsement**

Policies are needed on the endorsement of treatment charts when PODs are used and when patients are self-administering.

### **Assessing suitability**

A policy is needed on who assesses suitability of PODs for use in the hospital and the criteria to be used in making this assessment. Pharmacists and nurses can be involved in this assessment, but often it is technicians who do it.

In hospitals where pharmacy staff do routine assessment of PODs, arrangements need to be made on what happens when the pharmacy is closed, for example, whether or not nurses can assess the drugs, whether or not ward stocks be available, and when the pharmacist should be contacted.

### **Discharge procedure**

Even if all medicines are already in the patient's cabinet, hospitals stipulate that patients must see a pharmacist (or in some cases a technician) before discharge.

### **Staff training for new schemes**

Training of pharmacists, nurses and technicians will be needed for these new schemes.

### **Self-administration of medicines**

Self-administration schemes must be flexible, rather than strictly imposed to whole wards, and must be optional for the patient. Protocols are needed for assessing patients' ability to self-medicate.

Pharmacists and nurses can identify patients who have problems with their medicines, and can provide education about their treatment, with the aim of achieving self-medication before the patient goes home.

### **Financial aspects**

Although supply of a patient pack in place of previous discharge medication is probably cost neutral (or slightly beneficial) to the NHS as a whole, one-stop dispensing requires funds to be transferred from primary care budgets to secondary care budgets. Accurate estimates of costs involved will need to be calculated and the distribution of costs agreed between different health authorities and PCTs. A formula for calculating costs is available on [www.doh.gov.uk/prescribingbudgets/prescribing.pdf](http://www.doh.gov.uk/prescribingbudgets/prescribing.pdf) (Annex A).

Flexible systems are needed and participation of patient in these schemes has to be voluntary.

Self-administration is an option on all the wards at Queen's Medical Centre, Nottingham. Uptake is not high, but the scheme is said to be popular on health care of the elderly wards.

An issue that came to light during the Guy's and St Thomas' Hospitals pilot study was the importance of good communication when doses were changed or medicines discontinued to ensure that a self-administering patient is made aware of the change.

Two studies have reported improved post-discharge compliance in elderly patients who had self-administered in hospital.<sup>12,13</sup>

A self-administration scheme at the Royal Free Hospital, London, was reported to be well received by patients and nursing staff.<sup>14</sup> Nurses said that self-administration had a large effect on how well patients managed their drugs. They felt that medication errors were less likely to occur with the self-administration scheme, but did express concern about being held accountable for any patient errors that did occur. The majority of patients were in favour of self-medication and said they had received more counselling and education about their drugs than on any previous admissions.

## TRAINING

Introduction of these new schemes has implications for staff training. Larger hospitals, in particular, have found that extra staff are needed to introduce the new systems.

Training will be needed for pharmacy staff involved in PODs assessment. It is also essential that nurses are trained on how the new systems will be run and the practicalities of patient assessment for self-administration.

The importance of staff training is demonstrated by experience at Addenbrooke's Hospital, Cambridge, which obtained funding for four new technicians to extend the PODs scheme from the surgical wards (where it is well established) to the medical wards. In practice, checking PODs and checking medication histories taken by doctors was found to be too complex for newly trained technicians and a simplified scheme is now being introduced, with a plan to expand the technician's role as experience is gained.

## FINANCIAL ASPECTS

Inclusion of these schemes in "Pharmacy in the Future" should ease problems in gaining financial support for their implementation.

The financial implications to a trust of a change to use of 28-day packs for one-stop

dispensing can be considerable. As well as the drug costs, there is the initial cost of lockable bedside cabinets, plus training costs and possible staff costs.

Supply of a patient pack in place of the previous discharge medication is probably cost neutral to the NHS as a whole (or, given differing drug pricing policies, might produce a saving), but there are implications in terms of the need to transfer funds from primary care budgets to secondary care budgets.

Hospitals that have introduced 28-day dispensing say that the key was to prepare accurate estimates of costs involved. This can involve a considerable amount of work.

A framework for calculating the costs involved in moving from a seven- or 14-day discharge supply to a 28-day supply has been prepared by pharmacists in Bristol and is incorporated in national guidance to primary care trusts for budget setting. This can be accessed at [www.doh.gov.uk/prescribing-budgets/prescribing.pdf](http://www.doh.gov.uk/prescribing-budgets/prescribing.pdf) under Annex A. The framework is based on the fact that when calculating the extra money needed to move to a 28-day discharge supply, it is not simply a matter of multiplying costs by four (or two) as this will not be appropriate for certain medicines, eg, topical products, antibiotics, inhalers. The framework can be used to calculate "start up" costs and for ongoing monitoring.

Southern Derbyshire Health Authority reported a saving of £300,000 in 1997/98 when discharge medication changed from a seven-day supply to 28 days.<sup>15</sup>

Another assessment of the cost of moving from seven to 28 days' discharge medication was reported from Ipswich hospital.<sup>16</sup> There was an estimated increase in cost to the trust of £350,000 but a decrease in cost to primary care of £450,000 (drug costs only). These figures were used to present a business case for transfer of funds from primary to secondary care to finance the project, as a first step towards one-stop dispensing.

Use of PODs has cost benefits. In 1995, Queen's Medical Centre, Nottingham, reported a saving to the hospital by using PODs during inpatient stay and on discharge, equivalent to £5.18 per patient.<sup>7</sup>

Audit of a PODs scheme on 11 wards at Southampton University Hospitals NHS Trust calculated savings to secondary care by costing drugs used during the inpatient period plus an additional seven days to allow for discharge medications where PODs were used.<sup>10</sup> After allowing for staffing, the net saving to the 11 wards was calculated to be approximately £24,000 per annum.

Bristol Royal Infirmary assessed the financial aspects of reissuing PODs on discharge on four medical wards.<sup>17</sup> Of 1,006 drugs taken from 200 patients on admission, 778 (77 per cent) were considered suitable for reuse. On receipt of the discharge prescription, 438 (56 per cent) of the 778 PODs

were reissued. The main reason for not reissuing at this stage was that the drug had been stopped. Cost saving to the trust was on average £4.58 per patient—a potential saving of around £46,000 a year.

## GUIDANCE

Guidance on implementing schemes for one-stop dispensing, use of PODs and self-administration schemes is summarised in the panel on page 85.

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