

# Introducing a medicines management service led by a pharmacy technician

By MARIE-LOUISE LEWIS

*A technician-led ward medicines management service can reduce medication errors and free pharmacist time. This article describes the introduction of such a service at the Glan Clwyd Hospital in Denbighshire*



*Patient counselling and taking drug histories are important parts of medicines management*

Using the skills of pharmacy technicians (as well as pharmacists) at ward level to promote better medicines management was an important theme of the Audit Commission's "Spoonful of sugar" report<sup>1</sup> issued in 2001. Later documents, such as the Welsh health circular 2002/71, also promoted the development and delivery of modern medicines management services, and medicines management is now one of the standard performance indicators for all trusts in Wales for 2003/2004.<sup>2</sup>

With this focus in mind, the pharmacy team at Glan Clwyd hospital decided to introduce a new medicines management service that would be co-ordinated on each ward by a suitably trained pharmacy technician. The idea was that the technician would act as a central point for the management of medicines on wards but refer complex issues

to a pharmacist.

The procedure for introducing the new service was as follows:

- Review the "old" system for managing medicines to determine areas in which it could be improved
- Devise a "new" medicines management system
- Roll out a pilot of the new system on one ward
- Providing the pilot is successful, write standard operating procedures for medicines management technicians and train more technicians so that the new system can be introduced to other wards
- Evaluate the technician-led services to establish whether they reduce medication errors

## OLD SYSTEM

In order to review the "old" system, the senior technician worked at ward level with all nursing grades and junior medical staff at Glan Clwyd hospital to understand

their daily roles. The senior technician visited other local trusts and worked with pharmacy staff there to find out what medicines management practices were in place.

In addition, a baseline point prevalence measurement (a measure of the number of errors present at a given point in time) of the contents of all patient lockers at the trust was carried out. This involved inspecting patients' lockers and checking the contents against the prescription – the rationale being that if the wrong drug was present there was a greater likelihood of a nurse either choosing the wrong drug or not administering any drug. Four hundred and seventy-one patients were visited, and the 2,323 regular drugs that they were taking were checked. The results of this measurement are presented in Table 1 (p489).

## NEW SYSTEM DESIGN

Following this review, systems for improving the way in which medicines were managed at ward level were devised by the hospital medicines manage-

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**Table 1: Baseline results**

Locker contents	(% medicines)
Patients' own drugs	32%
Original pack dispensing	21%
Ward stock	40%
Prepacks	7%

  

Most common errors	(n=349) (%)
Omitted drugs	67 (15%)
Discontinued drugs	50 (11%)
Own drugs not in locker	43 (9%)
Wrong patient	37 (8%)
Wrong dose on chart	20 (4%)

ment team (nurse specialist, project pharmacist and senior medicines management technician). It was decided that better use should be made of patients' lockers. Other studies have shown that the correct use of patient lockers has led to a reduction in administration errors.<sup>3</sup> More use was also made of patients' own drugs with the hope that this would help to improve the accuracy of the contents of the locker.

A decision was made that technicians should find out patients' drug history and allergy status on admission and record the interventions they made. This was to try to address the common errors identified on the point prevalence test. Records of the interventions were required to allow peer review to ensure that technicians were undertaking this role competently.

Ward medicines stocks were also reviewed and amended to increase prepack availability and ensure that adequate stocks of the most commonly used medicines were always available to the nursing staff. Additional nurse training was provided to ensure understanding of the new system and to develop nurse competence in medicines management at ward level, with the aim of reducing the number of administration errors being made. Medicines trolleys were removed from wards. All of these changes were designed to reduce the risk of medication errors from poor prescribing, lack of supply and administration errors.

The duties of the technicians and pharmacists under the new system are set out in Panel 1.

### WARD PILOT

The new systems were rolled out on one pilot ward. This process was coordinated by the senior technician. Once the new systems had been in place for four weeks on the pilot ward, the point prevalence measurement was repeated. The results (Table 2, p490) showed that there was a reduction in both the number and type of medication error.

### TRAINING

## Panel 1: Responsibilities of ward based pharmacist and technician

### Medicines management duties of a ward-based technician:

#### General

- Visit the ward daily and print off ward inpatient status list
- Look at the drug charts at least once a day
- Act as a point of first contact about any queries from nursing staff about patients' own medicines
- Refer to the ward pharmacist as appropriate
- Act on referrals from the ward pharmacist providing him or her with feedback
- Act on urgent requests in the appropriate away
- Check patients' lockers on admission, at least once a week and on discharge
- Provide counselling to the patient in relation to their medication

#### On admission

- Screen patients' own drugs and take an accurate drug history according to the criteria set out in the standard operating procedures
- If the patient has less than fourteen days supply of medicines then order a new supply from the dispensary and endorse the inpatient chart according to the standard operating procedure
- If any patients' own drugs need relabelling, send them to the dispensary

#### On discharge

- Screen the prescriptions of patients who are being discharged that day against the patients' own drugs in their locker, checking whether there is sufficient supply of medicines for the patient to go home with
- If additional dispensing is required, ensure that the dispensary staff know the proposed discharge time so they can prioritise their workload

### Medicines management duties of a ward-based pharmacist:

- Visit the ward daily and print off the ward inpatient status list
- Target each new elective or emergency patient as soon as possible after admission
- Clinically screen the medication chart and rationalise the drug therapy
- Ensure monitoring of high risk drugs where appropriate
- Be involved in the clinical selection of therapies for the patient
- Ensure the continuity of pharmaceutical care in relation to medicines management
- Provide advice by attending ward consultant rounds
- Liaise with medical staff and discuss in depth any treatment issues
- Refer pharmaceutical issues to the ward-based technician where appropriate
- Act on referrals from the ward-based technician and provide feedback

At this point, the standard operating procedures and initial training plan were produced by the senior technician. Technicians to be introduced to this role on other wards within the hospital began their training. Training was provided on the standard operating procedures, ward layout and structure and communication methods (with ward staff, doctors, nurses, general practitioners and community pharmacists). Technicians were taught about the medicines management process, the triage procedures for passing complex problems to a pharmacist, how to read patient medical notes and how to take a drug history. The medicines management senior technician assessed competence of all technicians before they began working on the hospital wards.

### ROLL OUT

Once technicians were deemed competent to practise on their own, the service was rolled out to other wards. In order to ensure that the service given by the technicians continued to be appropriate, the technicians were asked to record all the interventions they made. These were then reviewed regularly by the ward pharmacist. The recorded interventions also provided information on whether the new system improved the medicines management process over time.

### EVALUATION

A summary of the interventions commonly being made is presented in Table 3 (p490). The results show that the processes being managed by the nurses have improved with the number of errors due to poor stock

**Table 2: Results before and after pilot**

	Before	After
Wrong drug in locker	0	1
Drugs incorrectly prescribed	1	0
Patient discharged with no drug	2	1
Drug not prescribed	6	0
Drugs not in locker	6	0

control reducing over time. The average number of patient discharges that have not required dispensary involvement because the medicines have all been available within the patient's locker is an average 68 per month (previously all prescriptions were sent to the dispensary).

Other in-house measurements undertaken as part of this study have shown a decrease from 50 per cent to 23 per cent in the number of discharge prescriptions requiring final dispensing for a technician-led ward.

### BENEFITS

Technicians value the opportunity to show that they have a role to play outside the dispensary. Pharmacists also benefit in that the extended role of technicians frees some of their time which they can then spend on more complex clinical requirements, which in turn increases their job satisfaction.

The early identification of medication errors using drug history taking as soon as possible during the patient's stay has undoubtedly reduced problems with discharge, as has been shown in other studies.<sup>1</sup>

Using appropriately trained technicians to co-ordinate the ward-based medicines management service has not reduced the standard of pharmaceutical interventions at ward level. The ongoing review of the interventions that technicians have made has shown that a consistent service has been provided. Pharmacists have agreed with the interventions made. There has only been one incident in which an intervention was incorrectly made – and the potential for this has now been addressed by changes in training and to the standard operating procedure.

The training programme has been well received with good feedback allowing revision where necessary. Further development of this is now in hand so that it fits into the standard training manual for technician development within the department.

### THE FUTURE

Some technicians are currently apprehensive about the new roles that are being created, believing that their present

**Table 3: Summary of technician interventions**

	Number of interventions made			
	Pilot 1 ward	Jan 2003 4 wards	Feb 2003 4 wards	Mar 2003 4 wards
<b>Drug histories taken</b>	88	194	245	211
<b>Type of intervention</b>				
<b>Prescriber error</b>				
Allergy omitted	0	12	33	25
Wrong drug prescribed	1	7	9	5
Wrong dose prescribed	6	9	15	18
Wrong form prescribed	3	2	2	4
Wrong frequency prescribed	5	10	6	12
Wrong time prescribed	0	1	1	0
Drug interaction identified	0	0	1	0
Drug omitted from prescription	22	70	72	67
TTO drug duplication	3	0	0	0
TTO transcription error	5	7	7	2
<b>Supply or ward error</b>				
Inpatient drug given to patient on TTO	1	1	0	0
Wrong drug in locker	4	11	5	18
Patient's own drug not in locker	28	45	21	17
Patient's own drug unsuitable for use	5	11	20	89
Drugs belonging to relatives	2	0	0	0
Discontinued drug not removed	3	18	29	12
Controlled Drug error	4	2	5	0
Identification of drugs impossible	2	0	0	0
Drugs supplied from pharmacy absent	4	3	0	0
Wrong treatment sheet by bed	1	0	0	0
TTO drugs not sent on patient transfer	1	2	0	0
No ward stock in locker	2	47	23	16
Total parenteral nutrition type not stated	2	0	0	0
<b>Pharmacy error</b>				
No pharmacy professional check/history error	1	1	0	0

TTO — "To take out" medicines (discharge prescription)

job is disappearing. However, the experience of providing the medicines management service suggests that the new ward-based roles are a step forward for technicians and should therefore be viewed with optimism, interest and enthusiasm.

### REFERENCES

1. Audit Commission. A spoonful of sugar — medicines management in NHS hospitals. London: Audit Commission; 2001.
2. Welsh Assembly. Welsh Health Circular (WHC) 2002/71. Cardiff: Welsh Assembly; 2002.
3. Pritchard K. A measurement of medication errors following the introduction of patient medication lockers at ward level [MSc thesis]. Liverpool: John Moores University; 2000.

This work is being presented at the American Society of Health-System Pharmacists midyear clinical meeting in New Orleans in December 2003, having won the AAH pharmacy technician of the year award 2003

### "Focus on technician" articles

This series exists to report on how hospital pharmacy technicians are pushing forward their traditional boundaries and making a full contribution to the profession. Any pharmacist or technician who is involved in any new developments in work undertaken by technicians is asked to consider writing an article for publication. Advice on the publication process can be obtained by telephoning the editorial department of *Hospital Pharmacist* on 020 7572 2425/2419