Introducing a technician discharge prescription transcribing service

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Releasing hospital beds, by speeding up the discharge process, is a priority for many trusts

Speeding up patient discharge is a priority for many trusts. This article looks at how having pharmacy technicians transcribe discharge prescriptions brings benefits, including reducing turnaround times for discharge medicines

Discharging patients from hospital can be a time-consuming process, and often results in patients waiting for their medicines and temporarily blocking beds.[1] In an attempt to speed up the discharge process, many hospitals have implemented patient pack, one-stop and ward-based discharge dispensing.[2] However, the rate-limiting step in the usual process is the doctor writing the discharge prescription,[3,4] which has been shown to account for 40 per cent of the total discharge time.[4] One group of researchers reported that the median delay between the decision to discharge being made and the discharge prescription being written was 47.5 minutes.[5] Numerous factors account for this delay, including distractions from the task caused by heavy workloads (particularly after long consultant ward-rounds), awaiting laboratory results, and forgetfulness.[6]

Since 2000, the EU has sought to set a timetable in which junior doctors would be restricted to working an average 58-hour week by August 2004, falling to 48-hours by 2009.[7] A House of Lords committee report has warned that implementation of the European Working Time Directive (EWTD) could lead to a staffing crisis equivalent to losing 3,700 junior doctors.[7] One method by which the impact of EWTD implementation could be eased is by transferring some tasks currently undertaken by junior doctors to other health care professionals.

Historically, writing discharge ("to take out" or TTO) prescriptions for hospital patients has been the responsibility of junior medical staff. Some doctors consider the transcribing of items onto TTO prescriptions as a mechanical process, and often do not undertake the task with the same care as when prescribing a new drug.[8] A service development that has been implemented in a number of UK hospitals is a pharmacist transcribing discharge prescription service.[9,10] In addition to relieving the junior doctors of their discharge prescription writing duties, reported benefits of such a service include reducing time delays in discharge,[4,5] and significantly reducing errors, omissions and alterations on written discharge prescriptions.[5]

A system whereby pharmacists write the discharge prescription while on a consultant ward round would appear to be in line with Audit Commission recommendations,[11] since any medicines management issues could be discussed with the whole team. However, it is debatable whether a system whereby a single pharmacist merely transcribes from the inpatient chart to the TTO is in line with Audit Commission's recommendations or indeed an efficient use of pharmacists' time. In the majority of pharmacist-led schemes, the pharmacist is more involved with deciding which items are transcribed onto the discharge prescription and which are not.

Technician involvement

The role of pharmacy technicians has evolved over the past few years.[12,13] A significant step forward occurred when it was recognised that pharmacy technicians, through accredited training, could be given the responsibility of performing accuracy checks on dispensed items.[14]

The NHS plan,[15] "Pharmacy in the future"[16] and "A spoonful of sugar"[11] all describe the benefits of extending technicians' role to ward-based activities. Through implementing the use of patients' own drugs and one-stop dispensing, ward-based technicians can improve medicines management at ward level.[17,18] Technicians who perform a ward-based role undertake an accredited training scheme for medicines management training, where an assessed competency includes the ability to transcribe from an inpatient drug chart to a pharmacy requisition form from which the drugs are dispensed in the dispensary. At Morriston Hospital, a medicines management service was introduced to four medical wards in early 2002.

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Although the medicines management system was considered a success, some difficulties arose with the timing of discharge prescription writing by the junior doctors. Failure to complete TTO forms in the early part of the working day (when most ward rounds were undertaken) led to the workload patterns of ward-based pharmacy staff becoming unbalanced, with most of the discharges being processed late in the working day.

The introduction of a pharmacist transcribing discharge prescription service was considered, but not implemented, because of difficulties in recruiting pharmacists at the time. Since there are similarities between transcribing from an inpatient chart to a pharmacy requisition slip and transcribing from an inpatient chart to a discharge prescription, consideration was given to extending the role of pharmacy technicians to writing discharge prescriptions.

This article describes the implementation of a pharmacy technician discharge prescription transcribing service at Morriston Hospital, which involved the five main steps of:

- Building a business case
- Establishing how the new technician transcribing process will work in practice
- Modifying the inpatient chart
- Training pharmacy technicians to transcribe prescriptions
- Rolling out

Information about assessing the service once it is in place and a description of the benefits the service has brought are among the other issues also included in the article.

Business case

In 2002, the National Assembly for Wales allocated monies to fund potential initiatives to facilitate compliance with the EWTD on junior doctors' hours. A submission was drafted by the pharmacy department at Morriston Hospital for funds to recruit a discharge pharmacy team to the medical unit. The proposed team would consist of one pharmacist and two technicians. The business case highlighted that pharmacy technicians would be responsible for transcribing discharge prescriptions.

To provide an estimate of the potential release of junior doctor time if the proposal was accepted, the time taken by junior doctors to write 50 discharge prescriptions was collected. Stickers were added to the inpatient charts asking doctors to write down the time they started and finished writing the TTO forms. A random sample of 50 TTO forms was then analysed. It took doctors a mean time of 10 minutes to write a TTO form (range 2 to 44 minutes). Since the medical wards at Morriston Hospital discharge around 3,600 patients annually, implementing technician transcribing could potentially release 600 doctor hours a year (ie, 50 hours a month).

The business case was accepted and staff recruitment began in early 2003.

New transcribing process

An outline of the new transcribing process can be seen in Panel 1. During the consultant ward round, and once the decision is made that a patient may be discharged, a junior doctor completes the discharge sections on a modified inpatient drug chart. This modified chart allows the prescriber to communicate to the transcribing technician which medicines should be issued to the patient on discharge (see below).

The nurse caring for the patient contacts a transcribing technician by bleep to inform him or her that there is a prescription to be transcribed. The technician then visits the ward and transcribes the items onto the TTO form according to the doctor's instructions. Technicians are authorised to transcribe all drugs with the exception of Controlled Drugs because, by law, the prescription for these agents must be written in a doctor's own handwriting. The name of the authorising doctor and the transcribing technician is documented on each TTO form.

Once the prescription has been transcribed, the ward pharmacist is contacted to perform a clinical check of the medicines on the TTO form. He or she also performs a transcription accuracy check at this stage. Once these checks are completed, the technician assembles the prescription on the ward. A final accuracy check is completed either by the ward pharmacist or an accredited checking technician, and the patient receives the medicines along with relevant counselling. It is important to note that a technician who assembles a prescription may not perform the corresponding accuracy check.

Modifying inpatient charts

In order to bring in the pharmacy technician transcribing scheme, the current All Wales in patient medication administration record" (IMAR) used at Morriston Hospital required some modification.

Following consultation between pharmacy and senior medical staff, a template for a new chart was agreed. This was piloted, with minor amendments being made as a result. The chart was also adapted to incorporate a "tick box" column on the right-hand side of each regular prescription entry. By completing this column for each prescribed item, the doctor could communicate to the transcribing technician which medicines were to continue indefinitely on discharge, continue for a period of days (ie, to complete a course of antibiotics, or steroids), continue until GP review or be discontinued on discharge.

The front page of the inpatient chart was also modified to include a section where a prescriber can specify any additional medicines he or she wants to be included on the TTO form. Also incorporated into the new chart was a dedicated area for the doctor to sign and date once he or she has completed the discharge sections of the inpatient chart.

Training technicians

To be considered for transcribing duties, a technician must:

- Have at least three years post-qualification experience

Panel 1: Flowchart of the technician transcribing scheme process

1. Decision made on ward round to discharge patient
2. Junior doctor completes discharge sections on inpatient chart
3. Nurse caring for patient contacts transcribing pharmacy technician responsible for the ward
4. Technician transcribes discharge prescription according to doctor's instructions on inpatient chart
5. Technician documents authorising doctor's name on TTO form
6. Pharmacist checks medicines listed on TTO form for clinical issues
7. Technician assembles prescription on the ward
8. Prescription accuracy check performed by pharmacist or by accredited checking technician

"TTO" means to take out on discharge

- Be an MTO2 grade or above
- Be a qualified accredited checking technician
- Be a qualified medicines management technician

Technicians who fit all of the above criteria and who wish to transcribe items onto TTO forms also have to follow the in-house accreditation process for TTO transcribing by technicians. This process consists of two stages — an academic tutorial and the supervised transcribing of items on discharge prescriptions on a ward.

During the academic tutorial, the TTO transcribing scheme is explained to the trainee. Trainees must read the two standard operating procedures relating to the transcribing scheme and sign to indicate that they understand the process. They must also read and understand the trust's safe prescribing procedure.

The practical session involves a trainee transcribing 100 items from inpatient drug charts to TTO forms on the ward under the supervision of a suitably qualified tutor (who is usually the pharmacist who covers the medical wards). Transcribing is then assessed for accuracy, legibility and other practical considerations. Trainees are allowed to make one minor, but no major, errors during the session (see Panel 2).

Roll-out

Following the education of junior doctors and nursing staff working on the medical wards and pharmacy staff, the new transcribing scheme began in May 2003. The initial roll-out was on the medical wards only — medical patients on other wards (outliers) were not included and doctors had to write the TTO forms for these patients in the traditional way. In order to provide the service to the medical wards, one technician was added to the ward-based pharmacy team, which already consisted of one pharmacist and one technician. Both technicians on each team were qualified to transcribe items onto TTO forms.

The modified drug charts replaced the All-Wales IMAR on the medical wards and accident and emergency departments.

Assessing the service

Eight weeks following the implementation of the technician transcribing service, an analysis of the system was undertaken. The two areas assessed were prescription turnaround times and the accuracy of transcribing under the new scheme.

Turnaround time For the purpose of the study, it was not possible to record the time the doctor ticked the IMAR, so prescription turnaround time was defined as the time that elapsed between a technician receiving a bleep and the resultant prescription being checked in readiness to be given to the patient.

For 50 prescriptions (randomly selected) processed under the new technician transcribing service, the mean turnaround time was 36 minutes (with a range of 8 to 100 minutes).

Unfortunately, no data were available for prescription turnaround times for the medical wards at Morriston Hospital immediately before the introduction of one stop ward dispensing and technician transcribing. However, in-house analysis carried out before the introduction of medicines management showed that the time taken to turnaround a discharge prescription in the dispensary was up to two hours. (This excluded any delivery time involved). The 36-minute turnaround time reported using the new system therefore appears to be an improvement on the traditional process. It is also comparable to that reported by others, where the introduction of a ward-based pharmacist who wrote discharge prescriptions on a medical ward resulted in the time spent by patients awaiting discharge falling from 4.5 hours to 40 minutes.[4]

Accuracy For 50 discharge prescriptions (randomly selected) written by doctors for medical patients on outlying wards, any transcription error identified by the pharmacist undertaking the clinical check was recorded. Similarly, all transcription errors identified on 50 (randomly selected) discharge prescriptions transcribed by a pharmacy technician were documented. Neither group was aware that data on transcribing accuracy was being collected.

A total of 273 items were transcribed by doctors and 258 items transcribed by technicians. The most frequent error reported for both groups was transcribing the dose frequency of a drug incorrectly (see Table 1, p236). Doctors made a total of 244 errors (8.8 per cent), while technicians made a total of 4 errors (1.6 per cent). The difference in the number of transcription errors made between the two groups was found using the chi-quared test to be statistically significant ($\chi^2=14.36, P<0.01$).

Benefits of the service

The poor quality of information transfer between secondary and primary care has been highlighted as a potential source of prescribing errors.[19] On occasions, under the traditional system, doctors writing discharge prescriptions would only transcribe medicines that were initiated during the patient stay or medicines that the patient did not have an adequate supply of at home. Although the pharmacy would endorse the prescription to indicate that it was not a complete record of the medicines the patient had taken while in hospital, this was little help to patients' GPs because they did not know which drugs had been stopped.

Under the new scheme, technicians are instructed to transcribe all the medicines that a patient is taking on discharge, which reduces the potential of any changes in medicines made in secondary care not being implemented in primary care. Anecdotal comments suggest that GPs in the local area think the quality of the information about discharge medicines issued from medical wards has improved.

Another benefit of the new system is that doctors do not need to sign the discharge prescription once it has been transcribed. The signature on the inpatient chart acts as the authorisation for discharge, and the documentation of the prescribers' name on the TTO form provides an audit trail.

Our preliminary analysis has also shown that technicians make significantly fewer transcription errors on discharge prescriptions compared with junior doctors. Similarly low error rates on discharge prescriptions have been observed in studies where pharmacists have undertaken transcribing duties.[4,6]

To ensure that the standards of the technician transcribing service are maintained and improved, we see it as important that the system is regularly audited and that staff

Panel 2: Major and minor transcription errors

Major errors

- Patient's name, case number or other relevant demographic details transcribed incorrectly
- Drug identified for discharge by doctor but not transcribed
- Drug transcribed but not identfied by doctor for discharge
- Incorrect directions given (when they were clearly indicated by doctor)
- Drug name transcribed incorrectly
- Dosage form transcribed incorrectly

Minor errors

- Deviation in spelling of drug name (although recognisable as intended drug)
- Not specifying the duration of treatment (eg, for courses of antibiotics or steroids)
- Not signing the TTO form to indicate who has performed the transcription
- Not including an indication of whether GP is to continue treatment
- Not including a date on the TTO form
- Not including the consultant's name on the TTO form

"TTO" means to take out on discharge

Table 1: Types and number of transcription errors made by doctors and pharmacy technicians

Types of error	Doctors' transcription errors	Technicians' transcription errors
Dose frequency incorrectly transcribed	10	3
Item not transcribed when it should have been	8	0
Item transcribed when it should not have been	4	1
Drug strength transcribed incorrectly	2	0
Total number of errors	24	4
Total number of prescriptions transcribed	273	258

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training is updated as the most common causes of transcription errors are identified. Both audit and training will ensure that the service adheres with the principles of clinical governance, whereby the process is quality assured and accountable.[20]

Limitations of the scheme

Introducing the service to the medical wards only at Morriston Hospital caused some initial confusion and delay. When discharging medical patients from outlying wards, the junior doctors often ticked the drug chart in readiness for transcribing by a technician, rather than completing a TTO form in the traditional manner. However, this problem was soon overcome by extending the service to all medical outliers in August 2003. To provide this extended service, an additional pharmacist and technician were recruited using National Assembly funds. However, until the service is extended to all patients (ie, including non-medical patients) at the hospital, the disadvantage and potential confusion of having two types of drug chart and two discharge systems in existence on the same wards will remain.

If the discharge sections on the inpatient chart are completed but the patient summary is not written on the TTO form, the pharmacy team will continue to transcribe, assemble and check the discharge medicines from the authorised inpatient chart. However, the medicines will not be given to the patient until the doctor completes the patient summary, which can occasionally lead to delays in discharge under the technician transcribing service.

It was mainly because of general problems in recruiting pharmacists that the new system was developed using suitably trained technicians to transcribe the discharge medication. However, pharmacists can still spend a significant amount of time on the final accuracy check, a role that ideally would be undertaken by an accredited checking technician. With an increase in the number of ward-based technicians working on ward units, it will be possible for a second technician to provide the final accuracy check.

Conclusion

Early signs indicate that introducing a pharmacy technician discharge prescription transcription service on medical wards at Morriston Hospital has been a success. The modifications made to the IMAR are serving their purpose and the system of technician transcribing has been well accepted by medical, nursing and pharmacy staff. Although not quantified during this initial audit, the fact that technicians have taken the duty of writing prescriptions from junior doctors indicates a release of medical staff time. The preliminary analysis also indicates that the new system has improved the timeliness of patient discharge and has not reduced the quality of prescription transcribing.

Future work

An electronic format of the technician transcribing service is currently being developed. Technicians enter the prescription details onto a computer instead of transcribing the discharge medicines manually. The computer then prints off a copy of the TTO form. At present, post is the only method by which these can be sent to a patient's GP. There are plans to send the information electronically in the future, but concerns about patient confidentiality will have to be addressed before this arrangement can be further developed.

Technician interview in *The PJ*

An interview with Lesley Morgan, past president of the Association of Pharmacy Technicians UK and one of the two technicians elected to the Royal Pharmaceutical Society's Council appears in the 21 May issue of *The Pharmaceutical Journal* (p614). Available via **www.pjonline.com**

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