

Re-engineering pharmacy services — what have we learnt?

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Many hospital pharmacies are re-engineering services to provide ones that are high quality and patient-centred using the best skill mix of staff. This article describes the changes made at one hospital, what drove them and the benefits achieved

Maidstone Hospital, part of Maidstone & Tunbridge Wells NHS Trust, is a district general hospital with approximately 460 beds. This article describes how such a hospital can re-engineer its pharmacy service and the timescale involved. The benefits of the new service will be discussed along with the problems encountered and the sources of finance used.

During the latter part of 1999, it was becoming more evident that our traditional style of pharmacy service (with no system for one-stop dispensing or using patients' own drugs) was at maximum capacity. This, together with reduced length of inpatient stay, increasing day care surgery and recruitment problems, made daily life in the department stressful and de-motivating for staff. The dispensary workload figures were continuing to increase and so too was the volume of returned items from wards. We were also aware that we were being too reactive and our service was not proactive enough.

In January 2000, an article was published about the William Harvey Hospital.¹ This described the increased role of pharmacy technicians in a more patient-centred ward pharmacy system. A visit to the William Harvey Hospital pharmacy department with its new style of service and improved quality of life made a deep impression. After the visit, I set out a proposal to re-engineer our own services. During our restructuring period, we were encouraged by a number of articles which were published describing the type of service we envisaged.²⁻⁴ The plan for pharmacy in the new NHS was launched, also at this time, in which the re-engineering of hospital pharmacy services and the use of patients' own drugs (PODs) in hospitals was encouraged.⁵

More recently, the Audit Commission's "Spoonful of sugar" document has highlighted and recommends the benefits of such

schemes.⁶

Table 1 shows a timetable of events during the restructuring period.

POMM

The new style of service was named POMM (for patient-oriented medicines management). There are two clinical pharmacy teams: a medical team and a surgical team. Each team has a pharmacist (Grade C or above) and an MTO3 clinical pharmacy technician. An MTO2 rotational technician also accompanies one team in a training capacity. The medical team currently covers the accident and emergency department, three acute medical wards, the coronary care unit and the medical assessment unit. The surgical team currently covers two general surgical wards, two orthopaedic wards, the surgical enhanced care area (SECA) and a gynaecology ward.

The objectives of POMM are shown in Panel 1 (p235).

ROLES OF TEAM MEMBERS

Panel 2 (p235) shows the roles of the team members. This is not an exhaustive list of duties but represents the "ideal skill mix" of roles. The technician and pharmacist on each team work closely and will cover each other's duties, depending on the daily pressures.

The changes made to the service have been summarised in Table 2 (p236).

Re-engineering the ward service has affected the whole department. The dispensary has also undergone a number of changes to ensure it provides an efficient and accurate service. The introduction of regionally accredited checking technicians greatly reduces the input from pharmacists in the dispensary. Most of the dispensary work is now validated on the wards, and this, together with a reduction in the number of telephone calls from the wards, has resulted in a more peaceful and improved

Table 1: Timetable of events during the restructuring period

March 2000	Proposal made to medical and surgical directorates Funding obtained for individual medicine lockers and £20,000 for a clinical MTO3 technician post
April 2000	Recruitment, production of protocols and procedures Restructuring of assistants to take over all ward stock top-ups Training of MTO2 technicians to undertake technician inpatient supply top-ups Decision regarding quantity of one-stop dispensing supplies Purchasing and fixing of individual medicine lockers Pre-launch data collection
September 2000	Launch of medical team Post-launch data collection
March 2001	Launch of surgical team
June 2001	Extension of surgical team to cover a gynaecology ward
September 2001	Conversion of one acute medical ward into a medical assessment unit Training of MTO2 technicians on their clinical rotation
Ongoing	Pharmacist support in pre-admission clinic
Future objectives	Self-medication on surgical wards All medication in individual POD lockers and removal of the drug trolleys

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Panel 1: Objectives of POMM

All charts to remain on the wards at all times
The teams are "on the wards" from 8.30am to 5pm, Monday to Friday
No telephone calls to be made to pharmacy from the wards
All requests for supply, advice and discharge medication to go to the team via a bleep system
Not all charts to be seen every day
Once a week, an MTO2 technician to perform a "technician inpatient supply top-up" and highlights all new items, changes in dose or new charts to be brought to the attention of the team pharmacist
Patients' own drugs (PODs) to be reused during admission and on discharge if they comply with the criteria
Prescribed items that are neither held as ward stock nor available as PODs to be given as a 28-day one-stop dispensing supply. Examples of exceptions to this are cytotoxics and increasing and reducing doses
All patients to receive a comprehensive drug history within 24 hours of admission (72 hours at weekends)
Discharge delays to be minimised

working environment. The benefits of one-stop dispensing (OSD) have been described before.³ Using original packs also has the added benefit of being relatively quick to dispense and check. We provide a 28-day supply at the outset for any item required during a patient's stay. A full OSD service was implemented in April 2002 after negotiations with the local primary care trusts.

The pharmacy assistants have also increased their activity by taking on all ward stock top-ups to release technicians for other roles. The possibility now exists for the development of pharmacy assistants to the level where they can dispense certain items.

USE OF PODS

Many studies have been published on the use and benefits of using PODs during admission.^{3,7-9} It is impossible to reuse PODs without appropriate and efficient storage facilities. The drug trolleys are not large enough to accommodate all PODs. Moreover, there is an increased potential for error in selecting the right patient's medicine when all patients' medicines are stored in one place. Individual medicine lockers are essential for the reuse of PODs and the "Pharmacy in the future" document clearly encourages the reuse of PODs to minimise waste.⁵ Stringent assessment of PODs is necessary to ensure safe reuse. Assessing PODs

takes time to achieve but allows the opportunity to highlight the roles of pharmacy and the assistance that can be provided. The time can be well used to court a better relationship and understanding with patients. The cost-effectiveness of using PODs has been discussed in the past,¹⁰ but if integrated into the POMM system by trained technicians, the benefits outweigh the potential risks (cost included).

SKILL MIX

The role of the technician is expanding. Technicians are enthusiastic about the opportunities but appropriate training is essential if they are to fulfil new roles. The benefit to pharmacists is enormous and we should welcome these moves. The evolution of technicians has a "knock on effect" on assistants, and they, too, will be offered some of the roles previously held by technicians.

Nursing and medical staff have welcomed POMM because they like having a pharmacist available at all times. In addition, the pharmacy teams know all the patients on the medical and surgical wards and this provides continuity. The reduction in pharmacy contact by forbidding telephone calls or the sending of charts to the pharmacy has in no way reduced our profile. On the contrary, we now have a higher profile on the wards and departments covered. Indeed, the director of the accident and emergency department has requested a meeting to investigate the possibility of recruiting a full-time pharmacist there.

PROBLEMS

The main problem encountered in setting up the service took six months to resolve and was to do with placement of individual medicine lockers. A final decision was made after consulting the risk manager, and senior nursing and ward staff. After taking into consideration that there are at least two styles of cabinets in the hospital, it was decided to fix the individual medicine lockers to the bedside cabinets rather than to the walls, for ease of access and to minimise risk.

One of the other problems is the lack of PODs being brought into the medical wards, despite sending posters to all GP surgeries and displaying them within the hospital. This is not a problem on surgical wards, where elective patients are encouraged directly in the pre-admission clinic to bring their medicines in with them. We intend to try and improve the quantity of re-usable PODs brought into hospital on admission by attending GP practice managers' meetings, encouraging the accident and emergency department to make sure medicines are kept with the patient on admission, and by speaking to the ambulance service directly.

Panel 2: Roles of team members

MTO3 clinical technicians:
Assess PODs
Take drug histories
Hold the team bleep
Prioritise calls
Organise supplies
Check discharge medicines with contents of locker
Liaise with the dispensary
Liaise with community pharmacy and GP surgeries about monitored dosage systems or queries on medication
Counsel all patients on discharge with basic level of information
Identify patients requiring more intensive discharge advice
Complete care plans
Provide training for MTO2 technicians on their "clinical rotation"
Train ward staff on aspects of POMM
Carry out audits of the service

Team pharmacists:
Clinically screen all prescription charts for clinical appropriateness
Clinically check all medication histories
Follow through any queries resulting from medication histories
Clinically screen all discharge medication
Liaise with the dispensary
Provide advice to medical and nursing staff
Counsel patients on discharge
Validate supply requests
Participate in consultant ward rounds as appropriate
Support the MTO3 technician when necessary
Assist in the training of pharmacy and nursing staff
Carry out audits of the service

It was originally thought that the level of direct clinical input by dispensary staff would diminish as a result of the teams. However, this is not the case because more patients are identified for additional medication counselling during the taking of drug histories. These patients are referred to accredited counselling technicians based in the dispensary. The technician top-up scheme also allows time for patient contact and the checking of PODs and inhaler technique. These activities can be realised if the workload in the dispensary is reduced.

Much training of ward staff is required to keep the system operating well. Since the launch of POMM, we still see some new staff bringing charts to the pharmacy. In addition to the initial intensive training of all ward staff, the MTO3s technicians now participate in the trust's discharge planning study day which all new nursing staff attend.

Table 2: Summary of changes

	Traditional service	POMM
Reuse of PODs	Only inhalers, eye-drops and creams	Except eye-drops and cytotoxics, all PODs are used if they comply with the POD checklist
Requests for non-stock items	A small inpatient supply is made. These are all returned or destroyed on discharge. None is reused	An OSD supply is made and all are reused on discharge if appropriate
Discharge medication	Most items need dispensing	Few items need dispensing
Inpatient charts	All charts are seen every day by a pharmacist. Charts are sent to the pharmacy for discharge medicines or inpatient items	All charts are seen a minimum of twice a week by a pharmacist and once a week by a trained technician. All charts on the coronary care unit and the surgical enhanced care area are seen daily. All charts remain on wards
Drug histories		Conducted for all patients
Discharge counselling	Only a few are conducted. All new warfarin patients counselled but only a few others are counselled	All new warfarin patients are counselled. All discharged patients are counselled to a basic level and referrals made to accredited counselling technicians for detailed discharge counselling

Before the new scheme was introduced we conducted a number of surveys in order to measure the impact of the new service. A survey of turnaround times of work in the dispensary showed that post-POMM, discharge medication is dispensed more quickly, and the overall number of items requiring dispensing on discharge is fewer. Inpatient items are also processed more quickly by the use of OSD supplies.

FUNDING

The various sources of funding used to implement the scheme can be seen in Table 3. In total, six new MTO3 technician posts were created. The pharmacists currently operating the teams are those from existing posts.

Funding was obtained from modernisation money to extend the scheme to Kent and Sussex Hospital and to Pembury Hospital. This funding has financed the individual

medicine lockers and salaries for three MTO3 technicians (totalling approximately £83,000). Initially, the funding for staff is for 18 months but we hope to obtain further funding by proving that the scheme is beneficial, offers a better quality of service and reduces wasted resources.

WHAT HAVE WE LEARNT?

In conclusion, we are confident that we can demonstrate that re-engineering has helped alleviate some of the concerns mentioned at the beginning of this article. We now have a front-line, proactive service to the medical and surgical wards and units. The clinical ward service has benefited from improved skill mix, efficient supply of medicines, reuse of PODs and use of medicines histories. The pharmacists are also more able to spend their time on clinical matters rather than on supply issues.

The dispensary has benefited from

Table 3: Sources of funding obtained

Funding for:	Source
Initial provision of individual medicine lockers for medical and surgical wards	Direct funding from medical and surgical directorates
MTO3 clinical technicians	Direct funding from medical and surgical directorates
	Conversion of money from a vacant B grade pharmacist post
	Reallocation of other pharmacy staffing resources
Further provision of individual medicine lockers	Application to the trust "performance fund"
Another three MTO3 clinical technicians	Application to the trust "performance fund"

improved skill mix, fewer interruptions, faster turnaround times for discharge medicines and a better quality of working environment.

Overall, POMM is a much more proactive service resulting in a higher pharmacy profile on the wards and minimising delays on discharge.

The few problems encountered were minimal in view of the great benefits realised. One of the most important factors in the success of re-engineering these service has been the enthusiasm of the staff. Regular and full communication with clinical and dispensary teams is essential to a harmonious service and that cannot be understated.

Our re-engineering exercise has met all of our expectations after the initial visit to the William Harvey Hospital. The months of planning and the worries during the periods of change have been well worth the effort. We are now settled into this modern approach, but the next phases are in preparation and will include expansion of the pharmacy service into the accident and emergency department, support in the pre-admission clinic and implementing self-medication. The strategy for increased funding is under way.

ACKNOWLEDGMENT With thanks to all the pharmacy staff at Maidstone Hospital for the implementation of the project, and to Jim Reside, chief pharmacist, for his trust and support.

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