

A prospective evaluation of pharmacy contributions to post-take ward rounds

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AIM • To evaluate pharmacy contributions to medical post-take ward rounds.

DESIGN • Prospective evaluation.

SETTING • Guy's and St Thomas' Hospital NHS Trust, London.

RESULTS • Data were collected over 3 years (November 1999–October 2002), by 32 pharmacists on 1,624 rounds. The care of 23,819 patients was reviewed by a senior pharmacist and resulted in 41,822 pharmaceutical contributions to care, 60% of which occurred on the “out of hours” rounds. The rounds took on average 175min and reviewed an average of 13 patients, 10 of whom received some form of pharmaceutical input. On average, a pharmacist makes 1.84 contributions/patient.

CONCLUSION • Pharmacy departments within acute trusts should seek appropriate funding to implement similar services since our results demonstrate that they are valuable, attainable and sustainable in the long term.

Adverse drug events (ADEs) are well recognised as a significant cause of mortality and morbidity. The greatest proportion of preventable ADEs occur at the point of prescribing, either in choice of therapy or in documentation of the order.¹ It has been demonstrated that clinical pharmacists supporting physicians at the point of prescribing can reduce error.² Funding was secured for pharmacists to attend all post-take ward rounds. A medical admissions pharmacist was appointed to co-ordinate and develop the service. This paper evaluates the outcome of the service three years on.

METHOD

Agreement was sought and obtained from other clinical practitioners to allow pharmacists to participate in the post-take ward rounds on a rota basis. Peer review sessions were held to ensure consistency of service delivery and advice provided. Ward rounds occurred at 8am and 6pm on weekdays and at 8am on Saturdays, Sundays and bank holidays. Evening, weekend and bank holiday ward rounds were classified as out-of-hours rounds.

Agreement was reached on the classification of contributions (see Table 1). Contributions focused on aspects of medicine prescribing known to be associated with ADEs.^{1,3–6} They were manually recorded on hand-over sheets for ease of communication with ward pharmacy teams. A Microsoft Access database was designed and data were prospectively captured over a three-year period. Pharmacists entered their own data after each ward round and their entries were quality-assured by the medical admissions pharmacist.

RESULTS

Over the three years from November 1999 to October 2002, 32 pharmacists participated in the post-take ward round service. These pharmacists were of a median grade D (range C–G) and had been qualified for a median of 8.5 years (range 3–25 years). All had postgraduate clinical qualifications and a minimum of nine months' general medical ward experience. These pharmacists collected data for 1,624 ward rounds, reviewing the care of 23,819 patients and recording 41,822 contributions to care. Sixty per cent of these contributions occurred on the out-of-hours rounds.

Each round took, on average, 175 minutes and an average of 13 patients were reviewed, of whom 10 received some form

of pharmaceutical input. The data suggested that pharmacists made one contribution every 10 minutes. The range of contributions made are summarised in Table 1.

On average a pharmacist made 1.84 contributions per patient. Contributions are made with all consultant teams.

DISCUSSION

Clinical pharmacists on post-take ward rounds can make a significant contribution to patient care. That 60 per cent of these contributions were made during an out-of-hours round demonstrates the need to re-configure services to ensure that patients receive comprehensive and consistent care regardless of the time of their admission.

For more than half of their contributions, pharmacists took a key role in the therapeutic decision-making process. Advising medical colleagues on choice of drugs and appropriate dosage regimens reinforced the medical knowledge of physicians with the specialist drug knowledge of pharmacists. This provided an opportunity for continuing education for both professions while at the same time improving patient care. Such a benefit might not have arisen in the traditional system of ward pharmacy. In addition, it resulted in the pharmacy contributions being peer-reviewed and subsequently accepted by consultant physicians.

Dose adjustment — optimising therapy for individual patients — has been a frequent contribution to patient care made on the advice of the pharmacist. Although such changes may have been made in the past, the presence of the pharmacist on the round has ensured that this occurs more quickly.

Clarification of patients' drug histories and their allergy status complemented the information available to the physician at the point of prescribing. This helped to ensure that patients received appropriate and safe therapy. The confirmation by the pharmacist of a patient's allergy status, when not documented on the drug chart, identified patients with allergies to penicillin, several of whom were to be prescribed amoxicillin. Full and accurate drug history-taking has been associated with reduced mortality caused by ADEs.^{3,5}

Once they had participated in the establishment of therapeutic plans for each patient, post-take ward round pharmacists also had a role in the efficient supply of inpatient and discharge medicines (almost a quarter of contributions).

Inpatient supply by pharmacists on the post-take ward round had several benefits: (i) patients received their medicines quickly,

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TABLE 1: BREAKDOWN OF PHARMACY CONTRIBUTIONS TO PATIENT CARE ON POST-TAKE WARD ROUNDS

Category and type of contribution	Definition	Number	% of total
<i>Supply</i>			
Inpatient supply	Facilitation of the supply of medicines to increase the efficiency of the admission	8,248	
TTO supply	Facilitation of the supply of medicines to increase the efficiency of the discharge process	941	22
<i>Therapy review</i>			
Therapeutic discussion	Discussion on therapeutic area initiated by pharmacist, but recommendations not implemented	5,748	
Therapeutic choice	The therapeutic class and dosage of drug prescribed was recommended by the pharmacist	6,507	
Dose adjustment	Advising on doses of drugs prescribed on the round and amending those prescribed before the round	6,108	
Therapeutic drug monitoring	The pharmacist advised on timing of samples, interpretation of results and gave guidance on appropriate regimens	611	
Adverse drug reactions	The pharmacist identified symptoms as potential ADRs or side effects	379	
Allergy status	Confirming the allergy status where none was documented on the chart	3,613	55
<i>Patient contact</i>			
Drug history	Clarification or addition of drugs to the patient's drug history	8,177	
Patient education	The pharmacist educated the patient on an aspect of their medication	1,388	
Other	Various, eg, tablet identification	102	23
<i>Totals</i>		41,822	100

(ii) drug charts remained on the ward, ensuring safe and appropriate administration of medicines, (iii) nurses' time was not wasted through having to go to the pharmacy, and (iv) since 60 per cent of this supply is made on the out-of-hours ward rounds, the number of occasions on which the resident pharmacist was required to supply medicines at inappropriate hours was reduced.

Supply of discharge medicines on the post-take ward round was a less frequent contribution. However, facilitating the availability of medicines significantly speeds the discharge process and has on several occasions resulted in a patient not being admitted. This improved efficiency has been an important achievement that has contributed towards the trust's objectives of increased patient throughput.

Establishing the pharmacy service to the post-take ward round involved pharmacists from a variety of directorates and there was concern that this was not best use of pharmacist time. However, the structure of the rota resulted in each pharmacist only attending a round six times in 16 weeks. A full weekend service was already in place and adjustment of these hours, together with the mid-week service, resulted in clinical pharmacy services being able to double the time that senior clinical pharmacists are available to the trust. When on the post-take ward round, only 10 minutes of a pharmacist's time is required to make one contribution to patient care. At the hourly rate for D grade pharmacists this equates to £2.87 per contribution.

The more junior staff undertook a nine-month rotation in general medicine (or had equivalent experience) before to their entry on to the post-take ward round rota. There appeared to be an acceptable consistency in performance across grades of staff. A formal process of review of performance is shortly to be undertaken and it is hoped that the quality of the service will be further improved.

The ongoing process of peer review of current therapeutics ensured the breadth of knowledge of all participants was maintained and that members of the team were responsive to new developments. A monthly prescribing audit meeting arranged by pharmacy for the general medical physicians provided a forum for further discussion of key therapeutic areas. The results also demonstrated the good working relationships with all consultants; contributions are consistently made with all consultant teams and pharmacists are now recognised as a valuable resource.

The comprehensive nature of the service is key to its success. The pharmacy department rosters staff to attend ward rounds every day, including Christmas day. Many of the contributions made on the ward rounds may have been made under the previous model of pharmacy service, but the key difference is the timeliness of these contributions with the new model. Problems are identified, prevented or resolved at the time of prescribing and discussed with the prescriber. This ensures that patients

receive appropriate care from the moment the prescription is written, preventing delays in opportunities for health gain and avoiding harm.

CONCLUSION

This paper describes the breadth of pharmacists' contributions to patient care on post-take ward rounds. Pharmacy departments within acute hospital trusts should seek appropriate funding to implement similar services, since our results demonstrate that they are valuable, attainable and sustainable in the long term.

ACKNOWLEDGMENTS The ongoing support and guidance of senior medical colleagues at Guy's and St Thomas' hospital is acknowledged. In particular we thank Dr Mac Cochrane (retired postgraduate dean, GKT medical school), Dr Finbar Martin (former director of general medicine) and Dr Terence Gibson (director of acute medicine). We are grateful, too, for the enthusiasm of the pharmacists involved.

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