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Management of Hospital Pharmacy in Private Sector

Jasleen Kaur, J.S. Bapna, Nilakantha Bhoi and O.P. Singh

The functioning of a pharmacy at a private sector multi-specialty hospital was studied with the objective of improving its services. It was found that average number of drugs per prescription was 3.78. This was higher than the normal 1.8 to 2. Though the dispensing time was 6.51 mins, only 0.57 mins was utilised for providing the drug information. Although, the pharmacy used inventory management tools such as ABC and FSN analysis, other tools such as VEN analysis, EOQ and safety stock were not used. There is a need for improving the services through utilisation of modern management tools. The pharmacy was located outside the hospital, which was inconvenient to the patients. The pharmacists had to substitute the drug in 54 per cent of the new cases and in 46 per cent of the old cases. In case the prescribed brand was not available the pharmacist invariably consulted the doctor before the substitution with another drug. However, the patients were very unhappy about it. Patients also resented being dispensed the whole strip, which they saw as a waste of money. The study indicates that the quality of services can be improved considerably through good managerial practices.

Introduction

Retail medicines shop, herein after termed as pharmacy, is a good source of revenue at the health-facilities, particularly the private hospitals. For this reason the manager who develops and runs these is valued by the hospital authorities. With good managerial practices not only the revenue can be earned but the quality of services can be improved. Besides the dispensing-practices, good stores-management may also save funds through reduction in expiry, deterioration of drugs and the pilferages. A pharmacy run at the Out Patient Department (OPD) of a private hospital, Fortis Heart Institute and Multi-specialty Hospital, Mohali was studied to see its functioning and suggest methods of improvement so that it can be converted into an ideal

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pharmacy. The hospital has a bed strength of 200 and 60–70 patients visit the OPD every day. The study was conducted for the period of three months, that is, from February to April 2004.

The pharmacy is licensed by the drugs-control authority and it fulfills the criteria set by it. It has an area of 10 sq. mt. with two qualified pharmacists dispensing the drugs in two shifts from 8.30 A.M. to 9.00 P.M. The drugs were stacked according to their dosage-form in an alphabetical order. The injections requiring a cool temperature were stored in the refrigerator. They follow the norms of good dispensing practices, that is, dispensing tablets in paper packets and some of the injections in cold polythene packs to avoid deterioration. The patient was given information about the medicines dispensed. The medicines were sold to the patients at a price 5 per cent below the maximum retail price (MRP) plus taxes as applicable. The medicines were dispensed in strips even when all the tablets were not prescribed. The standard operating procedures (SOP) of the pharmacy consisted of requisition of medicines from the purchase department based on re-order level (ROL) and consumption during the past. The pharmacists were not trained for managing the store as per the modern inventory management techniques. Only few areas of management techniques such as ABC and FSN analysis (analysis under which the items of inventory are classified in three different categories) were done by the stores-manager. The objective was to study the function of the out patient pharmacy, so that suggestions for its improvement could be made.

Methods

Four areas, namely dispensing time, quality of dispensing, inventory management and patient satisfaction were studied.

Dispensing-time

A time-motion study was conducted in a randomly selected sample of 300 patients by recording the time taken for different activities such as, patient waiting time at the counter till attended by the pharmacists, collection of medicines prescribed from storage area and dispensing, and time for generation of bill and providing drug information regarding dosage and frequency.

Quality of Dispensing

It was undertaken for 170 prescriptions. The indicators taken into consideration for the study were; average number of medicines per

prescription, percentage of prescribed brands actually dispensed or substitution made.

Inventory Management

In this ABC and VEN analysis (analysis under which the items of inventory are classified in three different categories), ROL, safety stock and Economic Order Quantity (EOQ) of drugs was analysed through secondary data collected from the records available on HIS (hospital information system) from the period of September 2003 to February 2004. For VEN analysis only the 'A' category of items were considered which accounts for 70 per cent of the total expenditure.

Patient Satisfaction

A survey was conducted on the randomly selected sample of 100 patients through a structured interview schedule. It included questions related to satisfaction regarding convenient location of the pharmacy, prices charged to patients, drug information provided, behaviour of the pharmacist and their overall impression for the services. An open-ended question inviting suggestions and comments was also included. For few of the questions, first-time and re-visiting patients was studied separately.

Results

Dispensing Time

The average total time taken for dispensing of medicines was 6.51 minutes. Of this the patients' waiting time at the counter was 2.00 min, collection and dispensing of medicines by the pharmacists was 2.23 min and the generation of bill and information to the patients was 3.08 min. Table 1 shows the time taken by different activities and it can be seen that maximum time was taken for issuing of medicines. The function was then further studied in a random sub-sample of 20 patients to know the break up of time for the generation of bill and the information to patient. It was found that the generation of bill through the computer took 2.11 minutes and the remaining 57 seconds were utilised in providing required drug information to the patient.

Quality of Dispensing

Average number of drugs prescribed per prescription were 3.79. Percentage of prescribed drugs actually dispensed were 82 per cent.

Table 1
Average Time Taken in Dispensing the Medicines

<i>Activity no.</i>	<i>Name of the activity</i>	<i>Time taken in the activity</i>
1.	Patient Waiting Time at Counter	2.00 minutes
2.	Collection of Medicines	2.23 minutes
3.	Issuing the Medicines	3.08 minutes
4.	Total Average Time in Dispensing the Medicines	6.51 minutes

Inventory Management

The study revealed that out of total 1,198 items, 104 items fell in 'A' category that consumed 70 per cent of total inventory value, 227 items were in 'B' category amounting to 20 per cent of the inventory value and 866 items were in 'C' category with 10 per cent of total inventory value.

Table 2
List of ABC Analysis

<i>Category</i>	<i>No. of items</i>	<i>Percentage of items</i>
A (70 per cent of total monetary value of inventory)	104	8.7
B (20 per cent of total monetary value of inventory)	227	19.0
C (10 per cent of total monetary value of inventory)	866	72.3
Total	1198	100

The VEN analysis of only 'A' category of drugs was carried out, as this represents high investment requiring a stricter control. When combined with ABC analysis it forms a powerful tool for a critical analysis of drug use and assists in containing the cost specially by restricting the expenditure on non-essential items.

Table 3 represents the results of VEN Analysis. The numbers of vital items were 45, essential 24 and non-essential 35. Among the 35 non-essential drugs, 23 could be restricted to reduce the costs of treatment. These were different brands of statins and their combinations with lipid lowering effect (16). The others were expensive third generation antibiotics for which cheaper

Table 3
Representing VEN Analysis of 'A' Category of Items

Category	No. of items	Percentage (%)
Vital	45	43
Essential	24	23
Non-Essential	35	34
Total	104	

and equally effective substitutes are available (5) and psychic-energisers of doubtful effects (2).

Inventory carrying cost is the cost associated with keeping the materials in the stores and it is assumed that these are 20 per cent of the average unit cost of the item. Inventory ordering cost is the cost incurred in placing the order and it was Rs 151 per order.

Re-order level (ROL), and safety stock was computed. ROL is the stock-level at which fresh order has to be placed that helps in avoiding under or over stocking of items. Safety stock or buffer stock is the quantity of stores set apart as a safeguard against the variation in demand and lead-time for procurement. It is equal to average consumption minus maximum consumption multiplied by lead-time. EOQ was calculated through carrying and ordering cost. It is the quantity of materials for which order is to be placed, this minimises total cost of carrying inventories and the cost of ordering. All of these Inventory control measures are derived only for 'A' category of items.

Patient Satisfaction

Availability of prescribed brand medicines: Out of the total sample of 100 patients, 28 were new and remaining 72 were re-visiting patients. Among the 28 first visit patients only 21 per cent received all the medicines prescribed. Out of the total interviewed 72 re-visiting patients, 7 per cent patients did not receive all the prescribed medicines anytime, 56 per cent patients said that they sometimes receive all the prescribed medicines (Table 4) whereas 22 per cent held that they always receive all the prescribed medicines.

Substitution of brand drugs: Offering of substitutes was common. Of the first visit patients, 54 per cent said that they were offered substitutes by pharmacists, although this was done after consulting doctors. It was found that most of the revisiting patients, that is, 59 per cent of 72 re-visiting

patients were given substitutes by pharmacists. Only 31 per cent said that they receive the brands actually prescribed to them (Table 4).

Information provided by pharmacists regarding dispensed drugs: Based on the total 28 first-visit patients interviewed, it was found that 54 per cent patients received the required drug information regarding dosage and frequency. Based on the total 72 re-visiting patients interviewed, it was found that 53 per cent patients received the required drug information. Few of the patients, that is, 29 per cent patients sometimes received the information and only 6 per cent patients said that they never received drug information (Table 4).

Receipt of bills by the patients: The generation of bill was a slow process and some of the patients may be unaware of the process. It was found that 36 per cent of the first visit patients did not collect the bill and they had difficulty in returning the unused medicines (Table 4).

Table 4
Representing the Results of First and Re-visiting Patients

Statements	First visit patients (Total 28, out of a sample of 100)		Re-visit patients (Total 72, out of a sample of 100) (in %)			
	Yes (in %)	No (in %)	Always	Sometimes	Rarely	Never
Receipt of all prescribed Medicines	21	79	22	56	15	7
Offering of Substitutes	54	46	15	44	10	31
Drug Information received	54	46	53	29	10	6
Receipt of Bill	64	36	70	19	7	4

Location of the pharmacy: The pharmacy was located outside the main hospital building. It was found, that out of the total sample of 100 patients interviewed, 75 per cent were able to locate the pharmacy easily. Thirteen per cent patients said that they were able to locate the pharmacy with some difficulty whereas 12 per cent found it very difficult.

Prices of the medicines charged at outpatient pharmacy: Maximum number of patients, that is, around 80 per cent said that they could afford the cost of medicines charged. Twenty per cent said that the cost of treatment was unaffordable to them (Table 5).

Table 5
Representing Replies of the Total Patients Interviewed

Statement	Highly satisfied	Just satisfied	Not much satisfied	Unsatisfied
Prices of the medicines	24	56	16	4
Behaviour of the pharmacists	62	36	2	0
Overall satisfaction	36	50	4	10

Reasons for preferring the out-patient pharmacy of hospital: Majority of the patients, that is, 56 per cent out of 100, preferred to visit the pharmacy due to convenience of the location being nearby. Of those, 33 per cent said that they preferred it because they believe that genuine drugs are available. ten per cent explained that they prefer to visit due to their previous good experience of the pharmacy and efficient services of the pharmacists.

Behaviour of the pharmacists: Almost all the patients were satisfied with the behaviour of pharmacists except 4 per cent who had some complaints against them (Table 5).

Overall satisfaction regarding the outpatient pharmacy: It was found that most of the patients, that is, 86 per cent patients were satisfied with OPP and the rest 14 per cent were not much satisfied (Table 5).

Remarks by Respondents

It was found that out of total sample of 100 patients interviewed, 70 patients responded and the rest 30 had no comments or suggestions to make. Out of the total 70 patients replied, maximum that is, 40 per cent said that all the medicines prescribed by the doctor should be made available at the pharmacy. Of the respondents 13 per cent said that full strips should be cut and as many tablets as needed should be offered to patients; 18 per cent were against the substitution of prescribed drugs; 11 per cent patients complained regarding the waiting time at the counter of outpatient pharmacy and 8 per cent said that patients should be allowed to return the medicines as many time as necessary. Remaining 10 per cent suggested relocation of out-patient pharmacy to a place, where facilities like AC and seating arrangements can be provided for the patients waiting at the counter.

Discussion

The average number of drugs per prescription was 3.79 which is higher than the normal practice of 1.8–2 drugs per prescription (Kishuna and Orrell 1997). This indicates that poly-pharmacy was practiced.

The total average dispensing time was 6.51 min including the waiting time of 2.00 min. However the actual dispensing time was 3.08 min out of which only 57 seconds were utilised for providing drug information. To provide adequate information at least a period of few minutes is necessary. In UK as much as 15 minutes are spent for this purpose. However due to heavy load of patients and lack of manpower, it is as little as 23 seconds in Bangladesh and 86 seconds in Nepal (Hoegerzeil et al. 1993). The remaining time was spent in collecting the medicines from storage and generation of the bill, which took a unusually long time due to faulty printer and software. So much so, that many patients did not wait to collect the bill. The pharmacy dispensed the drugs as full strips which were generally more than that of prescribed to them. The unused medicines could not be returned and the patients had to pay for those unnecessarily.

The pharmacy though conducts ABC and FSN analysis other inventory control measures such as VEN analysis, EOQ and safety stock are not determined. These tools can help in minimising the carrying and ordering costs. The VEN analysis of 'A' category drugs shows that a large amount of money was spent on expensive non-essential drugs such as lipid-lowering drugs third-generation antibiotics, nutritional-supplements and psychic energisers. This unnecessary expense for the patients can be reduced considerably. A feedback to prescribers on this issue is likely to help in improving their prescribing practices.

The patients felt that many drugs were not available at the pharmacy. This may be due to newer expensive brands prescribed. The substitution of drugs was also not appreciated by the patients.

Although the economic issues were not included in the study, it is quite obvious that the pharmacy makes a good profit with the prices 5 per cent below the MRP. It is well known that the actual cost of drugs is 30–40 per cent below the MRP with poly-pharmacy being practiced along with the expensive drugs being prescribed, the profits multiply. Though the pharmacy earns a large sum it did not provide the kind of services expected by the patients. The location of the counter outside the hospital was inconvenient for the patients.

Thus the study concludes that pharmacy is providing quality services and patients are on the whole are satisfied with it. However, various important areas have been identified, as discussed above which can improve the quality of existing services.

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