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# Research Paper

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## Assessment of Pharmacists-led Drug Information Service in a Tertiary Care Hospital in India

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Provision of drug related information to healthcare professionals for provision of better patient care is known as drug information service. The present study aimed to assess the drug information service provided by a drug information centre in India and to perform quality assurance of the same. A retrospective study was conducted for a period of 2 years from August, 2014-2016 at the drug information centre. A checklist was developed for quality assessment and studied. To describe about the data descriptive statistics frequency analysis, percentage analysis were used for categorical variables. A total of 469 drug information queries were received. Majority of receiver's rated excellent for the quality of service. The same was observed by the panelist while performing systematic quality assurance. The study concluded that the drug information service provided by the pharmacist caters to the need of health care professionals with excellent quality of work. Introduction of a mobile app software application is need of the hour.

**Key words:** Pharmacy practice, drug information, clinical pharmacy services, quality assurance, healthcare

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## INTRODUCTION

Till the recent past, the drugs available were few in number and hence, the need for drug information was minimal. But now, the present situation has changed with new modes of treatment, tremendous information explosion and great number of drug products being available each year<sup>1,2</sup>. Therefore, it is very important to procure accurate unbiased information. In India, irrational use of drugs is common and this has led to antibiotic resistance, adverse drug reactions, drug interactions and other drug related problems<sup>3-6</sup>. Among the many factors that make clinicians unable to update their knowledge about drugs, lack of unbiased drug information, availability of more than 60,000 formulations and lack of time are few notable reasons which ultimately lead to an increasing demand for independent, specific and unbiased drug information for better patient care<sup>7-9</sup>.

Drug information is a provision of unbiased, accurate and exact information of any information related to drug. Usually it is provided by a clinical pharmacist or pharmacist practitioner to healthcare professionals. Provision of such information is one of the professional responsibilities of a clinical pharmacist in healthcare system<sup>10-13</sup>.

By providing drug information service, pharmacists can assist medical practitioner and other healthcare professionals in individualizing patient therapy as a part of pharmaceutical care or a group of patients as part of a disease management program<sup>2</sup>. As that of other clinical pharmacy services, the provision of drug information service is also limited in India due to various factors such as unawareness and unacceptance of clinical pharmacy services in developing countries<sup>14,15</sup>.

Availability of large number of drugs in market and routine arrival of new drugs and drug related updates support the essential of drug information centre and services. With this background, the present study sought to appraise the drug information service provided by pharmacist in order to ensure that the service are provided in a proper manner and to identify further scope of improvement if needed.

## MATERIALS AND METHODS

A retrospective study was conducted from August, 2014-2016 after obtaining the approval by Institutional Ethics Committee (IEC-NI/16/JUL/54/51). The drug information centre is a part of the Department of Pharmacy Practice in Faculty of Pharmacy, Sri Ramachandra University.

The quality of services provided by the centre was assessed from the receivers' perspective on the basis of the feedback questionnaire circulated, which comprised of questions pertaining to awareness, utilization, ease of contact and quality of service provided by the centre. Suggestions from the requestors on the drug information centre were also solicited.

### Appendix S1: Quality assessment checklist for drug information service

#### Quality Assessment Checklist for Drug Information Service

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Faculty of Pharmacy, Sri Ramachandra University, Porur, Chennai

Name of the Physician/Faculty/Clinical Pharmacist:

Name of the institute:

Date of audit:

Was patient specific background information collected?

Yes No

Was details of enquirer collected?

Yes No

Were appropriate resources referred?

Yes No

Was appropriate answer given?

Yes No

Was drug information provided reviewed by staff?

Yes No

Was drug information provided within specified time?

Yes No

Was drug information provided documented completely??

Yes No

Were efforts made to follow-up for further information wherever needed?

Yes No

Name and Signature

Grade A: Excellent (7-8 points), Grade B: Good (5-6 points),

Grade C: Can improve (4 points) and Grade D: Should improve (3 or less points)

The quality assurance was checked by a panel of experts, namely clinical pharmacists, physician from our institution and one pharmacy practice faculty member from other institute. All the experts were asked to fill the checklist of quality assessment of drug information service (Appendix S1). For every semester (6 months once), the panel conducted an audit and randomly evaluated the queries.

## RESULTS

A total of 469 drug information queries were received during the study period of 2 years. Of 469 queries received, majority of them were received during ward rounds, followed by personal access of drug information center, email and phone. Majority of the drug information queries were requested for updating knowledge, followed by better patient care and education purpose. Interns requested majority of drug information, followed by nurses. Interestingly, majority of drug information were for indications followed by adverse effects, etc. It was found that out of 469 drug information queries, medical department requested 13% of queries followed by Cardiology and others (Table 1).

According to receiver's perspective, the quality of service was rated excellent by 75.4% and the remaining 24.6% rated well. Among the respondents, who utilized the drug information service, 96.3% received appropriate answer within the stipulated time. Few enquirers have suggested for 24 function of centre. Out of 234 drug queries evaluated by the panelist on quality assurance, 80.6% of drug information was found to be excellent and remaining drug information (19.4%) was found to be good.

Table 1: Categorization of the drug information queries

Categorization of queries	Number of queries	Percentage of queries
<b>Speciality</b>		
Medical	61	13
Cardiology	54	11.51
Chest and TB	38	8.1
ENT	38	8.1
Psychiatry	38	8.1
Endocrinology	33	7.03
Gynaecology	32	6.82
Pediatrics	31	6.6
Oncology	28	5.97
Nephrology	27	5.75
Neurology	25	5.33
Dermatology	22	4.69
Pharmacy	19	4.05
Nutrition	12	2.55
Others	11	2.34
<b>Status of the enquirer</b>		
Interns	210	44.77
Nurses	92	19.61
Doctors	63	13.43
Pharmacist	57	12.15
Nutritionist	28	5.9
Others	19	4
<b>Mode of request</b>		
Ward rounds	224	47.76
Personal access	112	23.88
E-mail	71	15.13
Phone	62	13.21
<b>Purpose of query</b>		
To update knowledge	205	43.71
Better patient care	170	36.24
Education purpose	94	20.04
<b>Time frame to reply</b>		
One day	186	39.65
On the same day	151	32.19
Two days	71	15.13
More than two days	61	13
<b>Type of query</b>		
Indication	128	27.29
Adverse effect	87	18.55
Drug overview	63	13.43
Mechanism of action	60	12.79
Dose	58	12.36
Contraindication and precaution	50	10.66
Interaction	23	4.9
<b>Class of questions</b>		
Drug oriented	292	62.26
Patient oriented	177	37.73
<b>Feedback for queries</b>		
Excellent	342	72.92
Good	118	25.15
Need Improvement	9	1.91

## DISCUSSION

In a total of 469 queries received by the drug information center during the period of 2 years, a maximum number of queries were received from the Department of General Medicine. The reason behind could be due to high utilization of vast number of drugs use in the ward. Majority of the queries were asked for updating the knowledge of the enquirer

hence an immediate answer is not required leading to a great number of queries being answered in handouts. This is in contrast to Rajanandh *et al.* 2011<sup>4</sup> where an immediate answer was required by the enquirer hence most the queries were answer verbally.

There are many published literatures on defending the important role of clinical pharmacists in providing clinical pharmacy services<sup>4,5</sup>. It is essential to ensure the quality of

service provided and its outcome. No regulation pertaining to quality assessment of drug information service is available. However, the present study used a standardized approach in quality assurance of drug information service.

Patel *et al.*<sup>6</sup> performed quality assurance of drug information service and drug therapy review without any external expert in the panel. However, checklist of quality assurance of clinical pharmacy service was similar to present study. In a study carried out by Bruchet *et al.*<sup>7</sup>, a conceptual model was proposed for improving the quality of clinical pharmacy services and its outcome measures could not be compared to present study. George and Rao<sup>8</sup> and Rajanandh *et al.*<sup>9</sup> evaluated the quality of service by provider's perspective alone. Another study by Rajanandh *et al.*<sup>4</sup> assessed the drug information services without any quality assurance.

Though use of quality indicators are beneficial as stated by Patel *et al.*<sup>6</sup>, the present study did not adopt any such quality indicators to evaluate drug information service. The reason behind is that, no difficulties were faced in collecting, processing and documenting the drug information queries while following the steps involved in modified systematic approach of answering queries.

Bhavsar *et al.*<sup>10</sup> reported that when the pharmacy students went ward round and approached health care professionals, they got remarkable response from the health care professional. If the students did not go and requested for queries, they observed a significant reduction in the number of drug queries. On the other hand, in our hospital settings, while the M.Pharm and Pharm.D students go for medical ward round, they received an unexpected comment from young generation health care professionals. Students and faculties of this modern era, do not prefer to walk over a drug information center and request for a query, rather they would prefer to have a mobile app software. Future studies can be directed in capturing the opinion of young generation health care professionals' view in paper based query request and a mobile app software application and to develop a software.

### SIGNIFICANCE STATEMENTS

This study developed a quality assessment checklist for drug information services that can be beneficial for healthcare professionals. The findings of this study will be helpful in performing quality assurance of a drug information center.

### CONCLUSION

The study concluded that the drug information services provided by the pharmacist caters to the need of health care professionals. The quality of the services provided by the

center was appreciated by majority of its users. Periodic evaluation of clinical pharmacy services by receiver's perspective and quality assurance are required to ensure the quality of services. Young generation professionals are reluctant to come center in person. Introduction of a mobile app software application is highly appreciated.

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