

Evaluation of drug information service provided by clinical pharmacists in a south Indian hospital

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ABSTRACT According to the Society of Hospital Pharmacists of Australia (SHPA), all patients should have access to appropriate clinical pharmacy services as part of hospital based care because these services reduce the incidence of adverse drug events. Providing drug information is a clinical pharmacy service and delivered as part of the multidisciplinary approach to patient care. Present study was aimed to evaluate the drug information service provided by clinical pharmacists in a south Indian hospital. In this prospective study, conducted at government headquarter hospital, Ooty, India. From June 2009 to January 2010. A total of 335 drug information queries were received, categorized, response, documented and peer reviewed by using a structured documentation forms. Microsoft Access was used for electronic documentation. Type of enquirers are; Doctors 26 (7.77%), Nurses 47 (14.03%), Pharmacists 02 (0.59%), lab technicians 01 (0.29%), students 254 (75.83%) and others 05 (1.49%). Purposes of enquiry are; for updating knowledge 325 (97.01%), better patient care 07 (2.09%) and others 03 (0.9%). Modes of request are; direct access 30 (8.96%), query box 301 (89.85%), email 03 (0.9%) and telephone 01 (0.29%). Response time for the query was; immediately 03 (0.9%), within 2-4 hours 03 (0.9%), within a day 101 (30.15%), within 1-2 days 186 (55.52%) and within a week (12.53%). Reference source were; primary source 13 (3.51%), secondary source 14 (3.78%), tertiary sources 43 (11.62%) and other (web) (81.08%). A peer review was conducted for 130 queries by the senior clinical pharmacists and categorize the service as; excellent 80 (61.54%), acceptable 30 (23.08%) and good 20 (15.38%). Present study concluded that, drug information service were useful and beneficial to the healthcare professionals for updating knowledge and better patient care.

Key words: Clinical pharmacist, drug information service, peer review.

Introduction

Healthcare today is the world's largest industry with revenues of US \$ 2.8 trillion. This industry comprising of pharmaceuticals, hospitals, nursing homes, pathological laboratories, day care centres and drug stores. For most developed countries, healthcare spending accounts for more than seven percent of their gross domestic product (GDP) ¹. In India, this industry is worth about Rs.100,000 crore (21445.42 US \$) and amount to nearly 5 per cent of GDP. One driver of growth in the healthcare sector is India's booming population, currently 1.2 billion

and increasing at a 2% annual rate. By 2050, the population is projected to reach 1.6 billion. This population increase is due in part to a decline in infant mortality, the result of better healthcare facilities ². Role of pharmacist in the health care scenario is very important for better patient care and World Health Organisation (WHO) has described the role of pharmacist as 'the seven star pharmacist' and it includes; Care-giver - the pharmacist provides caring services. Whether these services are clinical, analytical, technological or regulatory, the pharmacist must be comfortable interacting with individuals

and populations. Decision-maker - the appropriate, efficacious and cost effective use of resources (e.g., personnel, medicines, chemicals, equipment, procedures, and practices) should be at the foundation of the pharmacist's work. Communicator - the pharmacist is in an ideal position between physician and patient. As such, pharmacist must be knowledgeable and confident while interacting with other health professionals and with public. Leader- whether the pharmacist finds him/herself in multidisciplinary (e.g., team) caring situations or in areas where other health care providers are in short supply or non-existent, pharmacist is obligated to assume a leadership position in the overall welfare of the community. Manager- the pharmacist must effectively, manage resources (human, physical and fiscal) and information; pharmacist must also be comfortable being managed by others, whether an employer or the manager/leader of a health care team. Life-long-learner- it is no longer possible to learn all one must learn in school in order to practice a career as a pharmacist. The concepts, principles and commitment to life-long learning must begin while attending pharmacy school and must be supported throughout the pharmacist's career. Teacher - the pharmacist has a responsibility to assist with the education and training of future generations of pharmacists³. In 1988 a meeting was held on the WHO consultative group on the role of the Pharmacist in the health care system in New Delhi, India. In that meeting they had recommended that Clinical pharmacy should be promoted as a hospital discipline to ensure rational use of drug and reduction of costs and should play an active part in patient care by making their expertise available to other disciplines and departments⁴. In an increasingly complex health care environment, it has become difficult to compare the effectiveness of different treatment⁵. Role of the pharmacist has evolved from compounder and supplier of pharmaceutical products towards a provider of services and information and ultimately that of a provider of patient care. Increasingly, the pharmacist's task is to

ensure that a patient's drug therapy is appropriately indicated, the most effective available, the safest possible and convenient for the patient. By taking direct responsibility for individual patient's medicine-related needs. The practice of pharmaceutical care makes explicit the pharmacist's responsibility to the patient for the prevention of medicine-related illness. In this practice, the pharmacist evaluates a patient's medicine-related needs, then determines whether one or more drug therapy problems exist and if so, works with the patient and other health care professionals to design, implement and monitor appropriate care plan. This plan should be kept as simple as possible. The care plan must aim to resolve the patient's drug therapy problems. Ideally all patients who receive pharmaceutical products or services should also receive pharmaceutical care. Pharmacists should assume that all patients require pharmaceutical care until they have been assessed to exclude drug therapy problems. However, due to limited resources, this step is not always possible and a systematic approach may need to be adopted to facilitate the targeting of care⁶.

The term "clinical pharmacy" was coined to describe the work of pharmacists whose primary job is to interact with the health care team, interview and assess patients, make specific therapeutic recommendations, monitor patient responses to drug therapy and provide medicines information. Clinical pharmacists work primarily in hospitals and clinical care settings and provide patient-oriented rather than product-oriented services^{6, 7, 8}. Clinical pharmacy has been defined as 'those services provided by pharmacists in an attempt to promote rational drug therapy that are safe, appropriate and cost-effective'. The Society of Hospital Pharmacists of Australia (SHPA) says that, all patients should have access to appropriate clinical pharmacy services as part of hospital based care because these services reduce the incidence of adverse drug events^{6, 8}.

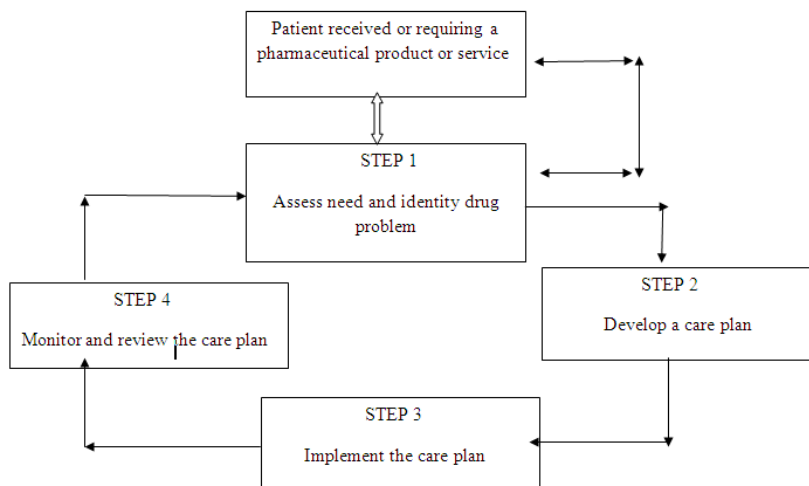


Figure 1: A systematic approach to the delivery of drug information

Methods

In this prospective study, conducted at government headquarter hospital, Ooty, India, from June 2009 to January 2010. Study protocol was approved by Institute Ethics Committee, JSS college of Pharmacy, Ooty, India (JSSCP/DPP/IRB/0007/2009-10).

A total of 335 drug information queries were received, categorized, responded and documented by using a structured documentation forms (Annexure-I, Annexure-II). Microsoft Access was used for electronic documentation.

For collecting the data, drug information query box were prepared and kept in the outpatient and different inpatient wards of the hospital. For telephonic queries, contact number is also written on the query box. For mailing the query via electronically, E-mail address (dicooty@hotmail.com) is also written on the query box. Drug information query request forms were kept in the query box provided in different wards.

Original research work publication was used as primary source of reference, full text articles was used as secondary source, standard text books was used as tertiary source and validated internet medicine data bank (www.drugs.com and www.rxlist.com) was used as other source of drug information query response.

Query response feedback was obtained by using structured feedback questionnaire and documented the enquirer’s feedback (Annexure-III).

A peer review was conducted for 130 queries by a committee of senior clinical pharmacists on a structured drug information response quality assurance evaluation form (Annexure-IV) and they categorize the service as; excellent, acceptable and good.

Results

Table 1 represents the categorisation of enquires based on enquirer designation. Which shows; Doctors 26 (7.77%), Nurses 47 (14.03%), Pharmacists 02 (0.59%), lab technicians 01 (0.29%), students 254 (75.83%) and others 05 (1.49%).

Table 1: Enquirer designation

Designation	Number of Queries	Percentage (%)
Doctors	26	7.77
Nurses	47	14.03
Pharmacists	02	0.59
Lab Technicians	01	0.29
Students	254	75.83
Others	05	1.49
Total	335	100

(Others: Faculty of Dept. of Pharmacy practice-03, Faculty of Dept. of Pharmaceutical Analysis-01 and receptionist of JSSCP-01)

Table 2 demonstrate the categorization of queries based on the purposes of the enquiry. These are; for updating knowledge 323 (96.41%), better patient care 07 (2.09%) and others 03 (0.9%).

Table 3 represents the categorisation for mode of request of the queries. These include; direct access 30 (8.96), query box 301 (89.85%), email 03 (0.9%) and telephone 01 (0.29%).

Table 4 demonstrate response time for individual query response made depending on the enquirer's need. And the results disclose that, immediately 03 (0.9%), within 2-4 hours 03 (0.9%), within a day 101 (30.15%), within 1-2 days 186 (55.52%) and within a week 42 (12.53%) query was attended.

Table 2: Purpose of enquiry

Updating Knowledge		
Designation	Number of Queries	Percentage (%)
Doctors	22	6.77
Nurses	44	13.54
Pharmacists	02	0.61
Lab Technicians	01	0.31
Students (Nursing)	254	78.15
Total	323/335	96.41
Better Patient Care		
Doctors	04	57.14
Nurses	03	42.86
Total	07/335	2.09
Others		
Others	03/335	0.9

Table 5 express the source of reference for response the query are; primary source 13 (3.51%), secondary source 14 (0.27%), tertiary source 43 (11.62%) and other (web) 300 (81.08%).

Table 3: Mode of request

Mode of request	Frequency	Percentage (%)
Direct access	30	8.96
Query box	301	89.85
Email	03	0.9
Telephone	01	0.29
Post	Nil	0.00
Total	335	100

Table 6 represents the peer review of 130 query response out of 335 enquires and

categorize them as; excellent 80 (61.54%), acceptable 30 (23.08%) and good 20 (15.38%).

Table 4: Response time

Response made	Frequency	Percentage (%)
Immediately	3	0.9
Within 2 – 4 hours	3	0.9
Within a day	101	30.15
Within 1- 2 days	186	55.52
Within a week	42	12.53
Total	335	100

Table 5: Reference source

Reference	Frequency	Percentage (%)
Primary sources	13	3.51
Secondary sources	14	3.78
Tertiary sources	43	11.62
Others (web)	300	81.08
Total	370	100

Note: more than one reference source were used for one query.

Discussion

Drug information centre (DIC) was established at government headquarters hospital, Ooty by Department of Pharmacy Practice since 1997 and, during June 2009 to January 2010 it has provided response to 335 queries healthcare professionals and others.

Study conducted by George et al ⁹ shows that, most of the enquirers utilized the drug information service regularly and appreciated the quality of services provided by the drug information centre and it was found that most of the beneficiaries of the service were the physicians (82%) and postgraduate students. Whereas present study demonstrates that, most of the beneficiaries are students followed by nurses and doctors.

Study conducted by Raal et al ¹⁰ shows that, maximum of their queries were received by phone and personal contact whereas present study findings

demonstrate that, most of the queries came from query box followed by direct access, email and telephone.

Table 6: Peer review

Categorization of service	Frequency	Percentage (%)
Unacceptable (1-2)	00	00
Acceptable (3)	30	23.08
Good (4)	20	15.38
Excellent (5)	80	61.54
Total	130	100

Presents study shows that, tertiary sources and validated internet medical data bank were most useful to respond to the queries which are similar to the early findings of Devi et al¹¹.

Present study findings regarding purpose of query were updating knowledge and better patient care. Among updating knowledge query was mainly the drug profile which asked by the nursing staff and nursing students and majority of

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the enquirers needed the answer on next day and almost all the queries were answered in time. Feedbacks of the response are rated as 'good', and 'satisfactory' but none of them were rated as "to be improved".

Peer review of present study categorizes the service as excellent, acceptable and good. In this present study less number of queries was received through Email and telephone.

Conclusion

Drug information services were well utilized by the physicians and other health care professionals and the drug information centre has been contributing towards better patient care by helping and assisting the health care professionals in optimizing the drug therapy by providing unbiased and relevant information for better patient care.