

Evaluation of Drug Information Services in a Tertiary Care Hospital

Syed Zia Inamdar^{1,*}, Sushil Kumar Londhe¹, Sumanyu Kategri¹, Raghavendra Kulkarni¹,
Sharan Badiger², Siddanagouda Biradar²

¹Department of Pharmacy Practice, BLDEA's SSM College of Pharmacy and Research Centre, Vijayapura, Karnataka, INDIA.

²Department of Medicine, Shri B.M. Patil Medical College Hospital and Research Centre, Vijayapura, Karnataka, INDIA.

ABSTRACT

Drug information services are of prime importance in delivering optimal drug therapies by providing specific and unbiased information to healthcare professionals. Present work has been undertaken to evaluate the pattern of various drug information queries received by the drug information center in a tertiary care hospital. A total of 593 drug information queries that were received during the period were evaluated retrospectively. Upon assessment, it was found that most of the beneficiaries of the service were physicians (51%). Greater numbers of queries received were to update knowledge (71.27%), followed by better patient care (28.72%). Most of the queries are received during ward rounds (71.63%). The types of queries received were categorically related to drug profile (6.75%), dosage information (3.71%), drug indication (13.49%), adverse effects (21.42%), the pharmacokinetics of drug (3.37%), pharmacotherapy (4.05%), drug interactions (1.52%), mechanism of action (11.30%), pharmacotherapy (4.05%) and poison information (0.17%). The source of reference for response to the query is mainly electronic databases (50.59%), secondary (21.08%), and tertiary sources (16.86%). The drug information services provided by the pharmacy practice cater to the healthcare services' needs for better patient care and updated knowledge. Moreover, these services will help the medical professional to prefer appropriate medicine in the management of the disease, thereby improving the treatment outcomes and patients' quality of life.

Keywords: Drug Information, Drug Information Services, Drug Query, Knowledge Update.

Correspondence:

Dr. Syed Zia Inamdar

Professor and Clinical Pharmacist,
Department of Pharmacy Practice,
BLDEA's SSM College of Pharmacy and
Research Centre, Vijayapura-586103,
Karnataka, INDIA.
Email: syedzia.inamdar@gmail.com

Received: 14-07-2023;

Revised: 06-08-2023;

Accepted: 29-08-2023.

INTRODUCTION

The healthcare industry is facing increasing challenges due to the growing prevalence of both acute and chronic illnesses worldwide. The continuous research and development of new drug therapies have led to a vast amount of information being available today, which can be difficult to manage for medical and pharmacy professionals. Factors such as high patient loads and limited time often prevent healthcare providers from keeping their knowledge up-to-date and incorporating the latest evidence into their practice, highlighting the importance of obtaining clear and unbiased drug information to achieve evidence-based practice.¹

The availability of accurate and up-to-date drug information is a critical aspect of promoting safe and effective drug therapies in patients. However, in many developing countries, access to such information is often limited and underutilized, leading

to irrational drug use and a host of related problems, such as antibiotic resistance, adverse drug reactions, drug interactions, and other drug-related issues.^{2,3}

To address these challenges, the establishment of drug information centers is highly recommended, where needed, to achieve healthcare goals. According to the Society of Hospital Pharmacists of Australia (SHPA), drug information centers offer comprehensive support by providing written and/or verbal information or advice regarding drugs and drug therapy. These centers cater to requests from various sources such as healthcare providers, organizations, committees, patients, or members of the public.⁴

Drug Information Service (DIS) is a critical component of healthcare that involves providing accurate and unbiased information about drugs and drug therapy to healthcare professionals. The service is typically staffed by specially trained individuals who have expertise in drug information and can provide information on specific patients or general information that promotes safe and effective use of medication.

According to a study published in the Journal of Pharmacy Practice and Research, DIS is an essential service that helps



DOI: 10.5530/ijopp.16.4.60

Copyright Information :

Copyright Author (s) 2023 Distributed under
Creative Commons CC-BY 4.0

Publishing Partner : EManuscript Tech. [www.emanuscript.in]

healthcare professionals to make informed decisions about drug therapy.⁵ The study highlights the importance of providing accurate and unbiased drug information, especially in developing countries, where access to such information is often limited. The Drug Information Centre (DIC) also provides drug information services to meet the requirements of various hospital departments' staff, such as doctors, pharmacists, nurses, and other healthcare practitioners.⁶ The Society of Hospital Pharmacists of Australia (SHPA) emphasizes that all patients should have access to appropriate clinical pharmacy services as part of hospital-based care, which can reduce the incidence of adverse drug events.^{7,8} In hospitals and clinical care settings, clinical pharmacists offer services that focus on patients, and they have a key role in providing drug information to physicians and nurses as part of their professional development.⁹ Clinical pharmacists who specialize in drug information are responsible for providing drug information to healthcare professionals, depending on the specific queries posed. They play a crucial role in enhancing the quality of patient care and improving patient outcomes.^{10,11} A drug information pharmacist is a person who has completed a course of training in drug information and specializes in the provision of drug information. In conclusion, DIS is an important service that plays a crucial role in promoting safe and effective use of medication. The availability of accurate and unbiased drug information can help healthcare professionals make informed decisions about drug therapy, leading to better patient outcomes.

MATERIALS AND METHODS

A retrospective study was conducted in a drug information centre managed by the department of Pharmacy Practice in a tertiary care hospital in Vijayapura city. The study retrospectively evaluated drug information queries that were received and documented through established modes such as during ward rounds, telephonic communication, direct access, and the internet. The queries were categorized for various parameters, including the enquirer's status and specialty of practice, mode of receipt, purpose of the query, type of query, utilization of reference resources, responding efficiency, and enquirer satisfaction with the query response. Categorical data was analyzed using Microsoft Excel and summarized in percentages and numbers.

RESULTS

During the study period, a total of 593 drug information queries were received. The majority of the queries were from physicians (51%), followed by postgraduate students (28%) and interns (12%) from the general medicine department. Most of the queries were related to updating knowledge (71.27%) and better patient care (28.72%) (Table 1). Ward rounds were found to be the most common mode of query receipt (71.63%), followed by direct access (26.54%) and telephonic (1.81%) modes (Figure 1).

The types of queries received were related to various aspects of drug therapy, including adverse effects (21.42%), mechanism of

Table 1: Categorisation of Drug Information Queries (n=593).

Categorisation	Number	Percentage (%)
General Medicine Department		
Physician	303	51
Postgraduate	167	28
Interns	70	12
Others	53	9
Type of Query		
Indication	80	13.49
Drug of choice	01	0.17
Drug profile	40	6.75
Poison information	01	0.17
Pharmacotherapy	24	4.05
Drug interaction	09	1.52
Treatment	02	0.34
ADR*	127	21.42
Dosage	22	3.71
Drug pharmacokinetic	20	3.37
Mechanism of action	67	11.30
Medication availability	00	0.00
Others	200	33.73
Reference		
Electronic database	300	50.59
Tertiary resource	100	16.86
Secondary resource	125	21.08
Primary resource	58	9.78
Other	10	1.69

ADR: Adverse drug Reaction.

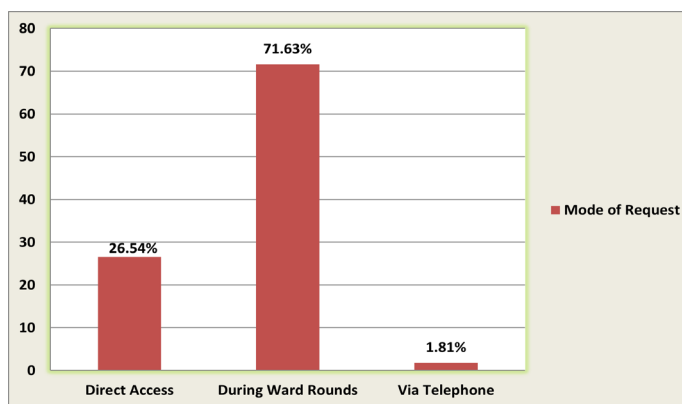


Figure 1: Mode of request.

action (11.30%), drug indication (13.49%), and others (33.73%). Electronic databases were found to be the most commonly used reference source (50.59%), followed by secondary sources (21.08%), tertiary sources (16.86%), and primary sources (9.78%). Almost all of the enquirers received appropriate answers within the intended time, and the drug information center received a

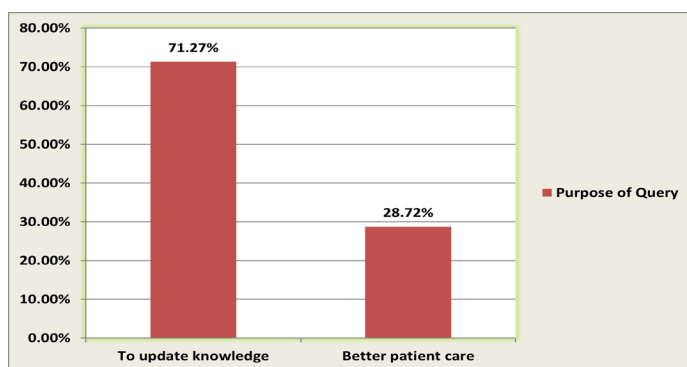


Figure 2: Purpose of Query.

maximum number of satisfactory feedback responses (94.44%). The performance of the drug information center was found to be good, indicating quality services (Table 1).

DISCUSSION

During the study period, the drug information center received a total of 593 queries, with a significant percentage coming from the general medicine department. This is possibly due to the department's utilization of a vast number of drugs, which necessitates specific, unbiased, and timely information. Moreover, the proximity of the drug information center to the medical department could be a contributing factor. Most of the queries were received during ward rounds, which could be because the clinical pharmacist is immediately available as an information provider during these rounds. Direct access queries may be due to the center's easy approachability and the ease of procuring the service. The majority of the queries were related to knowledge updates and better patient care, specifically related to drug profiles, dosage, adverse drug reactions, and drug indications (Figure 2). These results highlight the importance of having established mechanisms for drug information services, which can reduce the potential for adverse drug reactions, harmful drug interactions, and prescription errors. Enhanced communication and collaborative working relationships between physicians and pharmacists foster better patient care.¹²

The drug information center plays an essential role in providing comprehensive, objective, and evaluated information on drugs to healthcare professionals and the public. One of the primary resources utilized by drug information centers in answering drug information queries is online databases such as Micromedex, which is a widely used electronic database. Tertiary sources such as standard references, like Martindale, Drug facts and comparisons, and Stockley drug interaction, along with other reference textbooks, are also frequently consulted. These resources provide easily retrievable recent and relevant information for the provision of answers to queries.

The databases and the internet are a rich source of information on pharmaceutical and medical areas, providing access to standard peer-reviewed journal articles on query topics.¹³ Tertiary resources like printed textbooks provide quick references, while secondary resources, such as reviews of primary reports, offer a condensed and refined view of primary data, providing rapid responses to clinical questions. The drug information center's evaluation of the query responses reveals that almost all of the enquirers received the appropriate answer within an acceptable time.¹⁴

It is crucial for hospitals to have a Drug Information Centre to ensure physicians receive updated information about drug preparations and safety protocols. This could affect prescribing efficiency and quality prescribing or drug use among the patient population. Therefore, Drug Information services are a vital part of any healthcare establishment, and clinical pharmacists maintain and operate these services. The center should be fully functional, self-sufficient, and equipped with the required infrastructure and manpower.

Suggestions to improve the performance of the center include the provision of 24 hr service and increasing the interaction between clinical pharmacists and other healthcare professionals. This would ensure that healthcare professionals have access to information at any time and that the center's services are utilized effectively.

CONCLUSION

The drug information services offered by the pharmacy practice department at a tertiary care hospital serve a critical role in meeting the needs of healthcare professionals for enhanced patient care through selection of optimal medication, garnering evidence on safety, efficacy and critical drug profile information for improved treatment outcomes. However, greater awareness and encouragement among healthcare professionals are necessary to ensure that they take advantage of these valuable resources and continue to develop their professional and personal competencies.

ACKNOWLEDGEMENT

The authors are thankful to the management of BLDE association and BLDE Hospital, and Medicine department and staff for supporting the work.

CONFLICT OF INTEREST

The authors declare that no conflict of interest exists.

ABBREVIATIONS

DIS: Drug Information Service; **DIC:** Drug Information Centre; **SHPA:** Society of Hospital Pharmacists of Australia.

SUMMARY

Drug Information Service (DIS) is a critical component of healthcare that involves providing accurate and unbiased information about drugs and drug therapy specifically to healthcare professionals and in general to all who seek information on appropriate medication use. The present study tends to evaluate the utility of drug information services rendered by pharmacy practice department in a tertiary health care setting towards quality medicine use by prescribers among patient population.

REFERENCES

1. Nikolic G, Jankovic SM, Stojisavljevic D, *et al.* Current status of drug information centers in Serbia: a cross-sectional study. *BMC Med Inform Decis Mak.* 2020;20(1):211. doi: 10.1186/s12911-020-01215-w.
2. The world medicines situation. Geneva, Switzerland: World Health Organization; 2004.
3. Rajiah K, Maharajan MK, Yu LK, *et al.* Access to drug information in developing countries – a pharmacist's perspective. *Curr Drug Saf.* 2012;7(2):119-23. doi: 10.2174/157488612800492671.
4. Society of Hospital Pharmacists of Australia. Standard of practice for drug information services. *J Pharm Pract Res.* 2006;36(2):166-9. doi: 10.1002/j.2055-2335.2006.tb00539.x.
5. Das SC, Mandal M, Mandal SC. Drug information services: need of the hour. *J Pharm Pract Res.* 2013;43(1):76-8.
6. Amrita Institute of Medical Sciences. Drug Information Centre [cited Mar 21, 2023]. Available from: <https://www.amrita.edu/center/drug-information-centre>.
7. Society of Hospital Pharmacists of Australia. Standards of practice for clinical pharmacy [cited Mar 21, 2023]. Available from: <https://www.shpa.org.au/sites/default/files/uploaded-content/website-content/standards-of-practice-for-clinical-pharmacy.pdf>.
8. Roughead EE, Semple SJ, Vitry AI. Pharmaceutical care services and results in Project STOP (Simplifying the Treatment of Osteoporosis with Patient Persistence). *J Eval Clin Pract.* 2001;7(2):97-107.
9. Society of Hospital Pharmacists of Australia. SHPA standards of practice for clinical pharmacy [cited Mar 21, 2023]. Available from: <https://www.shpa.org.au/sites/default/files/uploaded-content/website-content/standards-of-practice-for-clinical-pharmacy.pdf>.
10. Bajracharya BL, Shrestha N, Gurung SB. Role of clinical pharmacist in promoting rational use of drugs. *J Nepal Med Assoc.* 2012;52(188):789-96.
11. Basheti IA, Al-Qudah RA, Obeidat NM, AbuRuz S. Role of clinical pharmacists in promoting rational use of medicines in Jordan. *Int J Clin Pharm.* 2012;34(3):379-83.
12. Doucette WR, Nevins J, McDonough RP, *et al.* Collaboration between pharmacists and physicians to improve patient outcomes: the CAP study. *J Manag Care Pharm.* 2004;10(2):185-91. doi: 10.18553/jmcp.2004.10.2.185.
13. Delgado-Silveira E, de la Figuera B. Usefulness of drug information services provided over the internet. *Int J Clin Pharm.* 2014;36(2):332-6. doi: 10.1007/s11096-014-9916-8 . PMID 24482149.
14. Holle LM, Moser LR, Brown NV, *et al.* Documentation of a drug information Center's interventions in a hospital setting. *Hosp Pharm.* 2018;53(4):238-44. doi: 10.1177/0018578718760306.

Cite this article: Inamdar SZ, Londhe SK, Kategri S, Kulkarni R, Badiger S, Biradar S. Evaluation of Drug Information Services in a Tertiary Care Hospital.. *Indian J Pharmacy Practice.* 2023;16(4):349-52.