

Evaluation of Drug and Poison Information Services in a Secondary Care Hospital and Community Pharmacies in Ooty

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Summary

Aim of the study was to provide current, well referenced, evaluated, comprised and unbiased information about drugs and related aspects in response to queries from the healthcare professionals to optimize patient therapy and to observe the convenient method for the healthcare professionals to give drug information query. The study was carried out from May 2007 to December 2007. The queries were taken from the enquirers using drug information request forms - verbal requests, during the ward rounds, phone, through messengers, mail or through drug information query box kept in the wards and community pharmacies. A total of 205 queries were recorded. Among which 32.2% of queries was from the inpatient wards, 16.58% from the outpatient department in the hospital, 20% through the drug information centre and 31.22% from community pharmacies. Auditing of 31 randomly selected queries was done to evaluate the quality of service, where 51.61% of responses were considered as excellent, 35.48% as good, 12.90% as can improve and none were rated as should improve. Drug information query box kept in each ward in the hospital and community pharmacies was found to be a convenient mode for query request and was utilized by the healthcare professionals. The community pharmacists were the most benefited from the drug information query box. Drug information service was well utilized by the enquirers which contributed for better patient care and in updating the knowledge. The innovative method of drug information box was well appreciated by the enquirers.

Key Words: Hospital and Community Pharmacies, Innovative Boxes.

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Introduction

Drug information centers are traditionally hospital- based centers designed to provide drug information to the medical, pharmacy, nursing staff and to a lesser extent to other allied health and community healthcare workers to contribute for a better patient care. The aim of the study was to provide current and unbiased information about drugs and drug use in response to queries received from the physicians and other healthcare professionals, which was to optimize patient outcomes by supporting the quality use of medicines; to enhance the image and credibility of profession; and to study about the convenient method used by the healthcare professionals to give request for the drug information query.

Objectives

- To expand the role of pharmacist in providing drug information services to the hospital and community.
- To create awareness and stimulate the effective use of drug information services and resources by the healthcare professionals- physicians, nurses, pharmacists, etc.
- To provide current, unbiased, comprehensive and well evaluated information based on the enquirers requests.
- To promote patient care through rational drug therapy by the improved availability and use of drug information.
- To analyze and classify the drug information queries received.
- To analyze the most convenient mode of request utilized by the healthcare professionals.

Methodology

1. **Study site:** The study was mainly carried out in the 420 – bedded Government District Head Quarters Hospital (GHQH) and 15 community pharmacies in Ooty. The study has also taken up the voluntary query requests from the sources other than the hospital and the community pharmacies
2. **Study Period:**
Study was carried out from May 2007 to December 2007.
3. **Preliminary plan of the study:**
 - Preparation and implementation of Drug Information Query Request Form (Annexure- I), Drug Information Documentation Form (Annexure- II), Drug Information Feedback Form (Annexure- III) and Drug Information Service-Quality Assurance Form (Annexure- IV).
 - Awareness about the Drug Information Services to the Healthcare professionals and other members involved in the study.
 - Detailing about the mode of request for the drug information through the drug information request form, verbal request through in person direct access during the visits or ward rounds, phone; through messengers, mail or using the drug information query box in the study sites (present in all the wards of the hospital

and the community pharmacies).

4. Assessments:

- Drug information service assessment
- Drug information quality assurance assessment
- Drug information service feed back assessment

5. Documentation

- All query information documented on a query form for legal purposes.

6. Data collection and processing:

- Receiving the drug information query request form from the enquirers through the various sources.
- Documenting the request forms and categorizing and recording the demographics of the enquirers, queries requested, sources and the mode of communication used.
- Retrieval of the information requested by the enquirer.
- Response to the queries – orally or written.
- Follow-ups and communication of the reply to the query and its documentation
- Feedback documentation and recording- whether information is satisfactory or not.
- Quality assurance of the service provided

Results and Discussion

1. Query sources:

| S. No | Sources of queries | No. of queries received | Percentage % | |
|-------|-------------------------|-------------------------|--------------|-------|
| 1. | Hospital | Intensive care unit | 36 | 17.56 |
| | | Male medical ward | 14 | 6.83 |
| | | Female medical ward | 11 | 5.37 |
| | | Pediatrics ward | 5 | 2.44 |
| | | Outpatient department | 34 | 16.59 |
| 2. | Drug information centre | 41 | 20.00 | |
| 3. | Community pharmacies | 64 | 31.22 | |

2. Enquirers categorization

| S. No | Type of Enquirers | No. of queries received | Percentage % |
|-------|----------------------|-------------------------|--------------|
| 1 | Doctors | 76 | 37.07 |
| 2 | Pharmacists | 72 | 35.12 |
| 3 | Nurses | 33 | 16.10 |
| 4 | PG students | 20 | 9.76 |
| 5 | Others/ Not recorded | 4 | 1.95 |

3. Mode of Response to the Drug Information Queries

| S. No | Mode of Response | No. of queries | Percentage % |
|-------|---------------------|----------------|--------------|
| 1 | Verbal | 30 | 14.63 |
| 2 | Written/ Printed | 143 | 69.76 |
| 3 | Literature articles | 32 | 15.61 |

4. Drug Information Query categorization

| S. No | Categorization of the queries | No. of queries received | Percentage % |
|-------|-------------------------------|-------------------------|--------------|
| 1 | Education/Recent advances | 65 | 31.71 |
| 2 | Drug therapy | 60 | 29.27 |
| 3 | Adverse drug reaction | 20 | 9.76 |
| 4 | Drug interaction | 4 | 1.95 |
| 5 | Poison information | 4 | 1.95 |
| 6 | Indication/ Contraindications | 2 | 0.98 |
| 7 | Pharmacology | 10 | 4.88 |
| 8 | Pharmacokinetics | 1 | 0.49 |
| 9 | Dosage and Administration | 26 | 12.68 |

| | | | |
|----|-------------------------|---|------|
| 10 | Pregnancy and Lactation | 2 | 0.98 |
| 11 | Natural products | 5 | 2.44 |
| 12 | Availability and cost | 1 | 0.49 |
| 13 | Others | 5 | 2.44 |

5. Mode of Request by the Enquirers

| S. No | Mode of request | No. of Queries | Percentage % |
|-------|---|----------------|--------------|
| 1 | In person - Direct access through drug information centre | 22 | 10.73 |
| 2 | During ward rounds | 65 | 31.71 |
| 3 | Drug Information Query Box | 98 | 47.80 |
| 4 | Telephonic requests | 2 | 0.98 |
| 5 | Through mail | 5 | 2.44 |
| 6 | Messenger | 13 | 6.34 |

6. Enquirer's mode of convenience in drug information request

| S. No | Mode of request | Percentage of Queries % | | | | |
|-------|----------------------------|-------------------------|-------------|--------|--------------|--------|
| | | Physicians | Pharmacists | Nurses | P.G students | Others |
| 1 | In person - Direct access | - | 4.39 | - | 9.76 | 2.44 |
| 2 | During ward rounds | 22.44 | - | 8.78 | - | - |
| 3 | Drug Information Query Box | 4.88 | 29.27 | 6.34 | - | - |
| 4 | Telephonic requests | - | - | 0.98 | 1.46 | - |

| | | | | | | |
|----------|---------------------|-------------|---|-------------|-------------|-------------|
| 5 | Through mail | - | - | - | 0.98 | 1.46 |
| 6 | Messenger | 5.85 | - | 0.98 | - | - |

7. Classification of queries based on the specialization

| Query clinical specialization | No. of Queries | Percentage % |
|--------------------------------------|-----------------------|---------------------|
| General medicine | 184 | 89.76 |
| Surgery | 4 | 1.95 |
| ENT | 0 | 0 |
| Oncology | 7 | 3.41 |
| Ophthalmology | 0 | 0 |
| Microbiology | 0 | 0 |
| Dermatology | 0 | 0 |
| Clinical pharmacology | 4 | 1.95 |
| Hospital pharmacy | 1 | 0.49 |
| Alternative medicine | 5 | 2.44 |
| Others | 0 | 0 |

8. Resources used for the answering drug information queries

| Resources | No. of Queries | Percentage % |
|-----------------------------|-----------------------|---------------------|
| AHFS | 15 | 7.32 |
| Goodman and Gilman's | 0 | 0 |
| Martindale | 9 | 4.39 |
| USP DI | 0 | 0 |
| Harrison's | 25 | 12.20 |

| | | |
|---------------------|-----------|--------------|
| Merck manual | 4 | 1.95 |
| Other books | 86 | 41.95 |
| Medline | 0 | 0 |
| IDIS | 14 | 6.83 |
| POISINDEX | 0 | 0 |
| IPA | 0 | 0 |
| ALTAMEDEX | 0 | 0 |
| Web | 50 | 24.39 |
| Others | 2 | 0.98 |

9. Mode of communication of response

| Mode of communication | No. of Queries | Percentage % |
|------------------------------|-----------------------|---------------------|
| Direct visit | 195 | 95.12 |
| Phone | 2 | 0.98 |
| Fax | 0 | 0 |
| Post | 4 | 1.95 |
| E - mail | 4 | 1.95 |

10. Purpose of query

| S. No | Query purposes | No. of queries | Percentage % |
|--------------|------------------------------|-----------------------|---------------------|
| 1 | Updating of knowledge | 110 | 53.66 |
| 2 | Better patient care | 73 | 35.61 |
| 3 | Others | 22 | 10.73 |

Evaluation of the quality of drug information services provided

An external auditing of 31 randomly selected queries was done, to evaluate both the quality of the service provided and also the characteristics of the drug inquiries. The standardized quality assurance form which included performance criteria based on ASHP standards for drug information practice and the systemic approach to drug information retrieval. Mean scores for all the drug information skills were determined on the basis of these categories.

Out of 31 queries which were randomly selected, as 2 queries per week for evaluation, the grading were as following 16 (51.61 %) were considered as excellent, 11 (35.48 %) as good, 4 (12.90 %) as can improve and none of the response was rated as should improve.

Feed Back of the Drug Information Service

A questionnaire which records the requestor's opinion about the responses was also received. The questionnaire was developed based on the predefined standards of drug information centre. Most of the requestors were generally satisfied with the service provided.

Discussion

Though the main purpose of the drug information centre is to improve the patients care by optimizing the drug therapy many of the queries received by the centre were to update the knowledge (details regarding recent advance and educational/academic knowledge).

The doctors and the pharmacist were the major utilizers of the drug information services. The doctors had more chances to give the drug information query request due to the direct access with the pharmacist during the ward rounds. The pharmacists were near in case of the drug information service utilization; this was mainly due to the innovative method used during the services (Drug information query box). The drug information query box which kept in each wards and the community pharmacies were found to be convenient mode query request.

The standard reference books where the most commonly used drug information sources. The centre also utilized World Wide Web sources and IDIS, Medline and various journals for the services. Most of the responses were given in written and printed forms with proper references and literature supports.

Results of the external auditing indicate that the most of the requestors were generally satisfied with the service provided. The feedback questionnaires have recorded a positive response from the requestors.

Conclusion

The drug information centre was well utilized by the clinicians and other health care professionals and the centre has been contributing towards better patient care by helping the physicians in optimizing the drug therapy by providing unbiased and relevant information. The centre also provides scope for the pharmacist in improving their knowledge; the clinicians were also very much interested in obtaining the information about the new drugs and newer therapies.

In most cases the drug information was provided by printed materials and answered orally for the question that required immediate answers and those that did not need elaborate answers.

Tertiary sources were found to be the most utilized source of reference, because most of the answers were found in the textbooks followed by the IDIS software, AHFS, Martindale's Extra Pharmacopoeia, Harrison's.

An innovative method which was used - the drug information query box was commonly utilized by the physicians, pharmacists and staff nurses. This method has proved to be convenient for the healthcare professionals who find it difficult in accessing the other mode of request for the drug information query. Limitation was that it can't be of use in case of immediate drug information responses.

Conducting an external audit has helped the centre to adopt the concept of total quality management in the services provided. This was an initial attempt at monitoring the information provided and we recommend an external validation of service in the future.

References

1. Rajendran SD. Drug Information. Parthasarathi G, Karin Nyfort Hansen, Milap C Nahata, editors. A textbook of clinical pharmacy. 1st ed. Hyderabad (India): Orient Longman Private limited; 2004; 267-87.
2. The Society of Hospital Pharmacists of Australia Committee of Specialty Standards Practice in Drug Information. SHPA standards of practice for drug information services. *Aust J Hosp Pharm* 1999 Jun; 29(3): 171-6.
3. ASHP guidelines on the provision of medication information by pharmacists. Medication therapy and patient care: specific practice areas- guidelines. *Am J Health -Syst Pharm* 1996; 235-37.
4. Alan Judd. UK Drug information manual. 4th ed. England: United Kingdom Drug information Pharmacist Group; 1997.
5. Kristen Wilkinson Mosdell, Patrick M Malone, Karen L Kier. Drug information resources. John E Stanovich, Kristen Wilkinson Mosdell, Patrick M Malone, Karen L Kier. Drug information a guide for pharmacists. 2nd Ed. New York (USA); Mc Graw -Hill Medical Publishing Service; 2001

6. SHPA Guidelines for Hospital Pharmacy Quality Assurance Programs. In Johnstone JM, Vienet MD. Practice Standards and Definition. Melbourne: SHPA; 1996.
7. Ramesh M, Parthasarathi G. Drug information –Role of Pharmacist. IJPE 2000 July- Sep; 34(3): 120-23.
8. Lakshmi PK, Gundu Rao SB, Shyamala Bhaskara. Drug information services to doctors of Karnataka, India. Indian J Pharmacol 2003; 35:245-7.

ANNEXURE: I

DRUG AND POISON INFORMATION CENTRE

J.S.S. COLLEGE OF PHARMACY

DEPARTMENT OF PHARMACY

ROCKLANDS, OOTY

DRUG INFORMATION REQUEST FORM

Date: **Time:** **Received by:**
Name of Enquirer: **Phone No:** **Unit:**

THE ENQUIRER'S PROFESSIONAL STATUS:

Physician Surgeon Resident PG's Interns Nurse
Pharmacist Others

Mode of Request: Direct access During Ward rounds Telephone

DETAILS OF ENQUIRY

Answer required: Immediately within 2-4 hours with in a day
with in 1-2 days

Purpose of Enquiry: Update knowledge Better patient care Others

Patient Details:

Age: Weight: Sex: Liver/Renal function:

Allergies: Current Medical Problem:

Current drug therapy:

Other details: if pregnant, 1st Trimester 2nd Trimester 3rd Trimester

If breast- feeding, Age of infant:

REFERENCES

| | | | | |
|----------------------|-----|---------------------------|-------------------|--------------------|
| AHFS Merck Manual | G&G | Martindale Other books | USP DI Medline | Harrison's IDIS |
| Poisindex Others | | IPA | Altmedex | Web |

PURPOSE OF ENQUIRY

Update Knowledge Better patient care Others

MESSAGE TAKEN BY:

INQUIRY:

In person Phone Letter Fax Messenger

ANSWER:

Oral Written Bibliography Literature

ANSWER COMMUNICATED BY:

Visit Phone Post Fax E-mail

Question answered by

Date & Time Answered

ANSWER

ANNEXURE: III

J.S.S College of Pharmacy, Ooty

Dept of Pharmacy Practice

Drug Information Feed back Form

Enquirer:

Enquiry Reference

YES NO

1. Was the information received in time before use? () ()

2. Was the given information satisfactory? () ()

3. Did the supplied information meet your requirements? () ()

If not, was this due to

a. Insufficient information () ()

b. Too much information. () ()

c. Information hard to understand () ()

Other

Please give details:

If yes to (a), was it necessary for you to Obtain information from elsewhere?

Where was this information obtained?

4. Was the information used? () ()

5. How was the information used? () ()

a. The answer confirmed that the patient therapy needed no change? () ()

b. The patients therapy was modified with no discernible effect? () ()

c. Was the therapy modified for the patients benefit? () ()

- | | | |
|---|------------|------------|
| d. For information for use in future patients? | () | () |
| e. For personal knowledge? | () | () |
| f. For teaching purpose? | () | () |
| g. For research purposes? | () | () |
| h. Others? | () | () |

Please give details:

Signature:

Date:

ANNEXURE: IV

J.S.S College of Pharmacy, Ooty

Dept of Pharmacy Practice

Drug information Service - Quality Assurance and Audit Form

Name of Enquirer:

Date:

Designation of Enquirer:

Enquiry

YES

reference:

NO

- | | | |
|---|------------|------------|
| 1. Are the resources used from the DIC? | () | () |
| 2. Whether enquiries are documented? | () | () |
| 3. Are the information received in time before use? | () | () |
| 4. Whether the information given is clear? | () | () |
| 5. Was the information supplied meet enquirer requirements ? | () | () |
| 6. Whether the latest information given? | () | () |
| 7. Are the full reference given? | () | () |
| 8. Was the information used for patient therapy change? | () | () |
| 9. Where any adverse reaction monitored? | () | () |
| 10. Was the patient benefited by the given information? | () | () |

Grade for response

A (Excellent) = 8 to 10 Points

B (Good)= 6 to 7 Points

C (Can improve) = 4 to 5 Points

D (Should improve) = < 4 Points

Remarks: