

Evaluation of Drug Information Service provided by Clinical Pharmacy Department based on Provider and Enquirers' Perspective

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Abstract

Drug Information service is an important role of clinical pharmacist and drug information service provision by clinical pharmacist is slowly being adopted in our country. There is a need to evaluate the quality of services provided by the drug information centers. This study was aimed for evaluating the services provided by a drug information center of a tertiary care hospital in South India. The quality of the service was evaluated based on providers as well as enquirers' perspective. Providers' perspective was evaluated based on a tool developed by DSE / WHO Seminar. Enquirers' perspective was evaluated by survey questionnaire. Evaluation results showed that both judgmental and non-judgmental queries had rating of very good or above. When enquirers' perspective was evaluated, around 70% of clinicians used services of the center and around 70% of the people felt that services were very good. 98% of surveyed physicians opined that there is a need for drug information center in the hospital. Evaluation of quality of service of drug information center based both on providers as well as enquirers' perspective showed that they were of good quality.

INTRODUCTION

Drug information centers (DICs) provide mainly health-care professionals and general public with information about all aspects of drugs. Drug information may also be needed for academic or research purposes¹. According to the Society of Hospital Pharmacist Australia (SHPA), among the different clinical pharmacy services provision of drug information is one of the most important services. The goal of clinical pharmacist involvement in the provision of drug information is to contribute to patient care and to optimize drug therapy. Clinical pharmacist involvement will help clinicians to understand about new drugs for which little information is available². In the past, drugs were few in number and generally of low potency. However, in the present situation due to therapeutic explosion more than 60,000 formulations are available in the market³. Moreover, due to information explosion, vast availability of literature and lack of time; health care professionals are not in a position to update their knowledge. Though there are prescription and non-prescription drugs; the free availability of drugs, irrational drug use, iatrogenic diseases, antibiotic Resistance, adverse drug reactions and events are very common in India. These factors have resulted in an

Increasing demand for independent, unbiased information about drugs for a better patient care⁴. Rosemary Sharp, a missionary from UK, started first "Drug Information Center" in India at Christian Medical College, Vellore in early 1970's. This center provides information on drugs to doctors, nurses, pharmacists, and other staff like research personnel of various departments. The first officially recognized department of Hospital and Clinical Pharmacy Services in a government institution was started in Medical college Hospital, Thiruvananthapuram in November 1992 as a new department of College of Pharmaceutical Sciences⁵. In 1997, JSS Institutes of Mysore & Ooty started clinical pharmacy services along with drug information services. Because of the success of their clinical pharmacy activities, in 1998-99 many institutions in south India started clinical pharmacy services and drug information centers. Quality assurance of services provided by drug information center is one of the important tasks to be performed by personnel involved in the activity. Quality Assurance of the drug information center is aimed to identify the key areas of drug information practice and establish indicators for these key areas like structure, process and outcome. There is also a need to establish minimum acceptable levels of performance for these indicators and review performance against these

Indicators. As a result of this quality assurance process, there is scope for identifying opportunities for improvement. Quality of the service provided by the drug information center can be evaluated based on provider and enquirer's perspective to get the complete information. This approach avoids the one sided evaluation and thereby resulting in better appraisal of the services. The present study was aimed at evaluating drug information services of the author's institute from both providers and as well as enquirers' perspective for the period of 2006-07.

METHODOLOGY

The study was conducted in a hospital in South Indian state of Karnataka, which is a 1472 bedded tertiary care multi-specialty teaching hospital. The Pharmacy Practice department located in this hospital provides drug information to all health care professionals. The study period was between August 2006 and February 2007. The provider's perspective of the evaluation was carried out using suitably designed Quality assurance forms (Fig.1). These quality assurance forms were based on the guidelines developed in the DSE/WHO seminar on evaluating the quality and effectiveness of a drug information center.⁶ In these guidelines, responses to queries have been categorized as judgmental and non-judgmental type. Based on the total number of judgmental and Non judgmental queries, sample size of the queries to be evaluated is fixed on the basis of anticipated proportion method. For Non Judgmental queries, the sample size was fixed as a minimum of 22. Therefore, 25 samples were fixed and equal number is fixed for Judgmental queries also. Therefore, total of 50 queries of 25 each of the judgmental and non-judgmental type were selected from the total queries handled during the study period. Sample of queries were evaluated according pre-determined, explicit and objective criteria using separate scales for judgmental and non-judgmental responses with a rating from 1 to 5. All relevant documentation pertaining to the query was considered for evaluation. The enquirer's perspective was evaluated by a feed back questionnaire (Fig.2). The questionnaire comprised of questions that reflected the awareness, utilization and quality of drug information services. Finally, suggestions from clinicians on DIC were also solicited. These questionnaires were distributed to physicians, postgraduate interns and other health care professionals who are utilizing the services of Drug Information Center. Towards the end of this study, filled questionnaires were collected back.

RESULTS

The study was a prospective observational study. During the study period, a total of 322 queries were handled by the drug information center. Out of these queries, 25 judgmental and 25 non-judgmental queries were randomly selected for evaluation using quality assurance form. When Non-judgmental queries were evaluated, 52% of the queries were rated as 5 which were the highest rating and 48% of the queries were rated as 4. None of the queries received rating less than 4. When judgmental queries were rated, 92% of queries were rated as 5 and only 8% of queries rated as 4. The results showed better rating for judgmental queries than non-judgmental queries. A total of 100 questionnaires were distributed and 75 completed questionnaires were collected back from clinicians. For a question on the awareness about the drug information center, 74% of them responded positively. Regarding the usage of drug information center, 54% of respondents opined positively. For a question regarding the frequency of usage, 91% of users opined that they used drug information center at least few times. When they were asked about the appropriateness of the information provided by drug information center, 95% of clinicians opined as appropriate. For a question on non receipt of answers for their queries, 15% responded that they did not receive an answer. For a question. On use of other resources, around 60% replied that they used other resources for references. For a question on the quality of the drug information center, around 60% rated it as very good, 30% rated as satisfactory, 4% rated it as excellent and 6% rated it as poor. Around 70% of clinicians rated communication skills of clinical pharmacist as excellent. 98% of the respondents have opined that there is a need for drug information center at the hospital. 37% of respondents felt that the performance of the DIC can be improved further. Some of the suggestions given by respondents were 24 hour drug information service and need for awareness program in hospital.

DISCUSSION

When a sample of documented queries were randomly selected in the category of judgmental and Non judgmental types, most of the queries were above the minimum required rating score for adequacy of documentation and questionnaire handling. One problem observed especially in case of non-judgmental queries was use of single reference to answer a query rather than multiple sources. This might be because of ready availability of Micromedex (Computerized Drug

Fig.1.a. Quality Assurance forms
EVALUATION OF ASSURANCE FOR ENQUIRY ANSWERING
(Judgmental-Type)

Query #: _____ Date: _____ Assessor: _____

DEMOGRAPHIC DATA :

Was the following information received noted?

100% of answer should be yes

Yes No

- Location
 - Profession
 - Relationship
 - Time received
 - Time needed
 - Address (if necessary)
 - Fee (if necessary)
 - Name the person who received the call
 - Category of requests
-

BACK GROUND INFORMATION

Was the following background information needed?

100% of answer should be yes

Yes No

Patient specific information

- Adult/child/infant/elderly
 - Medication history
 - Drugs
 - Current disease state
 - History of complications
 - Time frame for reply
 - Reason for question
 - Context of question
 - Confirm with enquirer that the question has been understood
-

SEARCH STRATEGY

Were the following procedure carried out in search strategy?

100% of answer should be yes

Yes No

- All relevant references were used
 - Review at least two appropriate tertiary source
 - Review at least two appropriate secondary source if necessary
 - Retrieved the primary literature if necessary
 - Consulted expert advisory, if necessary
-

LITERATURE EVALUATION

Was the literature evaluated in the following manner?

100% of answer should be yes

| | Yes | No |
|--------------------------------------------------------------------------------------|-----|----|
| Various data sources (if simple) were used | | |
| Response synthesized and evaluate (the data not merely summarized) | | |
| Logical and coherent conclusion were reached | | |
| References were in full detail, i.e. Title, year, edition, etc., volume, page number | | |
| Indication made as to why a basis was chosen | | |
| Reason stated where literature considered inadequate | | |
| Animal and/or in vitro identified as such | | |
| Older information identified and reason given for its inclusion in the evaluation | | |
| Personal knowledge can be substantiated by the literature | | |

RESPONSE

Was the following criteria met when response was given?

100% of answer should be yes

| | Yes | No |
|-----------------------------------------------------------------|-----|----|
| <i>For all responses:</i> | | |
| Time frame used for reply | | |
| All reference supported by the ad reference | | |
| Quinon identified as such | | |
| Latest information used | | |
| Question asked has been answered | | |
| Recommendation made are appropriate | | |
| Irrelevant information has not given | | |
| Level of reply is appropriate for the enquirer | | |
| Information is given is logically and unambiguously | | |
| Complex information adequately explained | | |
| Conclusion is given | | |
| <i>Written responses:</i> | Yes | No |
| Legible | | |
| Full references given | | |
| Date of reply is given | | |
| Name and status of the person preparing the reply | | |
| Reply has been checked by the authorized person where necessary | | |
| For all responses (for internal analysis only): | | |
| Articulate | | |
| Courteous | | |
| Professional | | |
| Concise | | |
| Organized | | |
| Consistent with written response (if necessary) | | |

**Fig.1.b. Quality Assurance forms
EVALUATION OF ASSURANCE FOR ENQUIRY ANSWERING
(Non-Judgmental Type)**

Query #: Date: Assessor:

DEMOGRAPHIC DATA

Was the following information received noted?

100% of answer should be yes

| | Yes | No |
|--------------------------------------|-----|----|
| Full name | | |
| Location | | |
| Profession | | |
| Date received | | |
| Time received | | |
| Time needed | | |
| Name of person who received the call | | |
| Category of request | | |

BACK GROUND INFORMATION

Was the following background information needed?

100% of answer should be yes

| | Yes | No |
|---------------------------------------------------------------|-----|----|
| Time frame for reply | | |
| Reason for question | | |
| Context of question | | |
| Condition with enquirer that the question has been understood | | |

SEARCH STRATEGY

Were the following procedure carried out in search strategy?

100% of answer should be yes

| | Yes | No |
|----------------------------------------------------|-----|----|
| All relevant references were be used | | |
| Review of at least two appropriate tertiary source | | |

LITERATURE EVALUATION

Was the literature evaluated in the following manner?

100% of answer should be yes

| | Yes | No |
|--------------------------------------------------------------------------------------|-----|----|
| Various data sources; not a single were used | | |
| Logical and coherent conclusion were reached | | |
| References were in full detail, i.e. title, year, edition, date, volume, transnumber | | |
| Indication used where abstracts were used | | |
| Reason stated where literature considered inadequate | | |
| Animal and/or in vitro identified as such | | |
| Other information identified and reason given for its inclusion in the evaluation | | |
| Personal knowledge can be substantiated by the literature | | |

RESPONSE

Was the following criteria met when response was given?

100% of answer should be yes

| | Yes | No |
|-----------------------------------------------------------------|-----|----|
| <i>For all responses:</i> | | |
| Time frame met for reply | | |
| All reference supported | | |
| Condition identified as such | | |
| Latest information used | | |
| Question asked has been answered | | |
| Recommendation made are appropriate | | |
| Irrelevant information has not given | | |
| Level of reply is appropriate for the enquirer | | |
| Information is given as locally and internationally | | |
| Complex information adequately explained | | |
| Conclusion is given | | |
| <i>Written responses:</i> | Yes | No |
| Legible | | |
| Full references given | | |
| Date of reply is given | | |
| Name and status of the person preparing the reply | | |
| Reply has been checked by the authorized person where necessary | | |
| Verbal responses: (for internal analysis only) | | |
| Articulate | | |
| Courteous | | |
| Professional | | |
| Confident | | |
| Organized | | |
| Consistent with written response (if necessary) | | |

OVERALL RATING: A minimum range of 3 should be obtained for either response

1. Significant deficiencies made the consultation unacceptable for use. The response was incorrect, inadequate, biased, poorly documented.
2. Significant deficiencies with regard to documentation comprehensiveness, timeliness writing or other important aspect of the consultation existed, but the response was basically adequate.
3. This is the minimum acceptable level for judgmental analysis. The consultation was good but minor problem with documentation comprehensiveness, timeliness, writing or other important aspect existed.
4. Other than a minor problem with documentation, comprehensiveness, timeliness, writing or other important aspect, the response was very good.
5. The response was excellent, comprehensive and well documented and timely. For some question, an integration of data obtained from several references may be necessary to formulate a response.

Fig.2. Feed Back Questionnaire

1. Are you aware of the drug information center (DIC) functioning in our hospital?
 YES NO

2. Have you ever utilized the services of the DIC in our Hospital?
 YES NO
 (If yes, how often?)
 Regularly Sometimes

3. Have you received appropriate answers for your queries?
 YES NO
 If no, give reasons
 Outdated Not relevant
 Insufficient information Too detailed
 Others

4. Have you received the appropriate answer within an acceptable time?
 YES NO

5. Is there any query for which you have not received an answer?
 YES NO
 If yes, specify the number _____

6. Did you obtain the appropriate answer from any other sources?
 YES NO
 If yes, where was it obtained? (Please specify):

7. How do you rate the performance of the DIC existing in our hospital?
 Excellent Very good
 Satisfactory Poor

8. How do you rate the communication skills of the clinical pharmacist?
 Excellent Very good
 Satisfactory Poor

9. Is it necessary to have a DIC in our hospital?
 YES NO

10. Do you think the DIC can improve its performance? Please give suggestions.
 YES NO
 If yes, please give suggestions:

Information database) and ease of getting answers from it and in most of the cases, Micromedex alone is used as reference source. In the survey conducted among Clinicians, around 74% of clinicians were aware of the drug information service and 54% have actually utilized the services. This shows that there is a need to familiarize the drug information centre among the clinicians who did not know about its existence and need to encourage clinicians who have not utilized the services to use the services for better patient care. For a question on the appropriateness of the answer provided by the drug information center, 95% have told that the answers were

appropriate. Regarding the question on rating of communication skills of clinical pharmacist and performance of drug information center, majority of the responders have rated both as very good. This shows the functional capability of Drug information center as well as the clinical pharmacists working there. But, some physicians have rated the performance of DIC as poor and some have rated it as satisfactory. This aspect has to be looked into and care has to taken to find out lacuna and rectify it. This study showed that the results were comparable to a study reported by Beena G et al from the same center in the past⁷. This shows that the center is

Consistently maintaining the quality of service. This study shows that usefulness of evaluation of drug information service from the providers and enquirers perspective acts as non biased valuable tool in quality assurance of the services.

CONCLUSION

The evaluation of the quality of the drug information center based on providers and enquirers perspective showed that the service provided by the drug information center of the study hospital was of good quality. This method of dual perspective can be considered in quality assurance of patient oriented services provided by clinical pharmacists in hospital settings.

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REFERENCES

1. Hansen KN, Nahata MC, Parthasarathi G. Drug Information: In: SD Rajendran. A textbook of clinical pharmacy practice, essential concepts and skills. 1st ed. Orient Longman: 2004.p 267-86.
2. Society of Hospital Pharmacists of Australia.

Standards of practice for drug information services. SHPA practice standards and definitions 1998:18-1.

3. Hansen KN, Nahata MC, Parthasarathi G. Clinical Pharmacy in India: In: BG Nagavi. A textbook of clinical pharmacy practice, essential concepts and skills. 1st ed. Orient Longman: 2004.p 1-8.
4. Parthasarathi.G, Ramesh.M, Nyfort .H.K, and Nagavi.B.G. Clinical pharmacy in a South Indian teaching hospital. The Ann of Pharmacother. 2002; 36(5):927-932.
5. Revikumar.KG. Drug Information In: Proceedings of workshop on Pharmacy practice for practicing pharmacists, Teachers and Students. Medical College Trivandrum; 1999: Trivandrum, Kerala. P. 63.
6. Barlett G. Evaluating the quality and effectiveness of a drug information center In: Barlett G, Miller J, Baler L, editors. DSE /WHO Seminar on Drug Information Centers. Proceedings of the Seminar 1997.Berlin.
7. Beena George, Padma G.M.Rao. Assessment and evaluation of drug information services provided in a south Indian teaching hospital. Ind J Pharmacol 2005; 37(5):315-318.