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PERFORMANCE OF A DRUG INFORMATION CENTRE IN A SOUTH INDIAN TEACHING HOSPITAL

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ABSTRACT: Drug information service describes activities undertaken by pharmacists in providing information to optimize drug use. The aim of the present study is to evaluate and assess the quality of drug information services provided by a drug information centre in a teaching hospital. The study period was between January 2008 and February 2009. A total of 393 drug information queries were received during this period, out of which majority were received from general medicine department (93.6%) during ward rounds (61.5%). Frequently asked queries were regarding adverse drug reaction (26.9%), dosage/administration (21.8%) and the purpose of the queries were for better patient care (58.2%). The qualitative assessment of the queries was performed and the results showed that both judgmental and non-judgmental types of queries were falling above the acceptable score according to DSE/WHO seminar guidelines. The clinician's feedback questionnaire showed that (80.6%) of the physicians were aware of the drug information centre. The respondents reported that the answers of the queries were appropriate with good quality (94%) and also they received the reply on time (87%). They commented that the communication skills of the pharmacist was excellent (69.3%) and opined for 24 hour basis working of the drug information centre. The performance of the centre has been found to be good and consistent when compared with the previous reports. In conclusion, the centre can improve the performance and work according to the needs of the hospital.
KEYWORDS : Drug information centre (DIC), Drug information, Pharmacists.

INTRODUCTION

Pharmacists have fundamental responsibility and a function that is unique to their profession as providers of Drug information. [1] As per the definition of 'Society of Hospital Pharmacists of Australia' (SHPA), Drug Information is the provision of written and/or verbal information or advice about drugs and drug therapy in response to a request from other healthcare providers, organizations, committees, patients or members of the public. This may relate to specific patient or consist of general information promoting the safe and effective use of medications. Drug information service describes activities undertaken by pharmacists in providing information to optimize drug use. The term includes, but is not limited to, the specialized services offered by the drug information centre. [2] Drug information service provides unbiased, well referenced, critically evaluated and up-to-date information on any aspect of drug use. [3]

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 market. 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. [4]

As pharmacists have become increasingly involved in influencing prescribing, it is important that they provide unbiased evidence-based drug information to prescribers. Pharmacist's interventions directly impact patient care, decrease the likelihood of medication errors, and improve medication compliance. [5]

Effective drug information and evaluation skills are a vital part of routine pharmacy practice. Practicing pharmacists today are faced with the challenge of keeping up with an increasing number of new drugs and an increasing number of biomedical journals and articles available on MEDLINE. The number of drugs approved by FDA has increased dramatically in recent years**.** [5] The aspect of providing lack of unbiased, written information for health professionals has resulted in an increasing demand for independent drug information. As there are only few drug information centre's in India and are limited by lack of trained staff, funds and by limited access to current literature.[6] This clearly signifies that there is a need for periodic evaluation of drug information services to assess their function and quality, especially in developing countries**.** To ensure this, a systematic process for quality monitoring, development and problem solving is required. This assessment of quality is done in three major areas i.e. Structure, Process and Outcome. Structural assessment includes an annual review of the resources like personnel, facilities and organization, while process assessment reviews the activities involved in the provision of drug information like documentation, receipt of enquiries, resource search, data collection, evaluation & assessment of data and formulation of replies. Outcome assessment reviews the results of the provision of drug information. [2]

The main objective of our study is to evaluate the various drug information queries received, and to assess the quality of services provided by the drug information centre of the pharmacy practice department.

METHODOLOGY

The study was conducted in a hospital in South Indian state of Karnataka, which is a 2000 bedded tertiary care multi-specialty teaching hospital. The drug information centre is a part of the department of pharmacy practice for 9 years in the Kasturba hospital and is internationally recognized by the Australian Society of Hospital pharmacy. The study period for evaluation and assessment was between January 2008 and February 2009. The drug information over this period of study was reviewed and evaluated for quality in the areas of process and outcome. This approach avoids the one sided evaluation and thereby resulting in better appraisal of the services.

The quality and the effectiveness of the drug information centre were assessed using guidelines developed in the DSE/WHO seminar. [7] In these guidelines, responses to the queries are categorized as judgmental and non-judgmental type. Judgmental enquiries require judgment, integration of new data with pre-existing knowledge and experience, extensive searching of secondary and tertiary references and a primary literature review. In simple terms they are patient specific. Non-judgmental responses represent a lower degree of sophistication and do not require judgment.

The anticipation proportion method was used for calculating the sample size required for the assessment of judgmental and non-judgmental queries based on the total number of queries handled by the drug information centre during the study period. A sample size of 22 queries was fixed as a minimum value for non-judgmental queries. From the total queries handled during the study period a total of 50 queries of 25 each of the judgmental and non-judgmental type were selected. After evaluation, enquiries were scored from 1 to 5: '5' indicated that the information given was excellent, '4' very good, '3' good, '2' adequate and '1'that the consultation was unacceptable for use. The minimum acceptable level of rating was considered to be '3'.

Outcome assessment of drug information services was performed by preparing a feedback questionnaire (Annex.1). The questionnaire comprised questions that reflected the awareness, utilization and quality of the drug information services provided by the centre. At the end of the study period, the questionnaire was distributed to health professionals of the hospital and later evaluated. The study also compared previous performances of the same centre to the current performance.

RESULTS

The study was a retrospective observational study. The centre received 393 queries during the study period. A larger number of queries were from the medicine department (93.6%) and the other departments which used the drug information service were nephrology, dermatology and so on. Most of the queries were received during ward rounds (61.5%) and by telephone (30.2%). The major categories of queries frequently asked were on adverse drug reaction (26.9%), dosage/administration (21.8%), and drug therapy (27.3%). The results indicated that the main purpose of the drug information was for better patient care (58.2%) and followed by physicians update for knowledge (42.2%). The mode of reply of the queries were found to be mostly verbal (88%), printed (11.1%) and verbal/written (2%). Most of the queries were falling under immediate time frame to reply (82.4%). The resources available for drug information services are primary, secondary and tertiary. Primary resources include research and case reports in journals, secondary sources include indexing and abstracting databases like IOWA drug information service and Micromedex, and tertiary sources include textbooks (Table 1). In this study, secondary resources (67.9%) were most commonly used, followed by tertiary resources (25.1%).

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% (13) of the queries were rated as 5 which was the highest rating and 44% (11) of the queries were rated as 4 and 4% (1) of the queries were rated as 3. When judgmental queries were rated, 84% (21) of the queries rated as 5 and 12% (4) of the queries rated as 4 and 4% (1) were rated as 3. The results showed better rating for judgmental than Non-judgmental queries. A total of 80 questionnaires were distributed and 62 (78%) completed questionnaires were collected back from clinicians. For a question on awareness of drug information centre, 50 (80.6%) of them responded positively. A total of 60 (96.7%) of the respondents have opined that there is a need for drug information centre in the hospital as it can provide better patient care 45 (72.5%) and also improve on current knowledge updates 10 (16.12%). Regarding the usage of drug information centre, 33 (53.2%) of them opined positively. For a question regarding the frequency of usage, 30 (90.2%) of users opined that they used drug information centre regularly. When they were asked about the appropriateness of the information provided by the drug information centre, 58 (93.5%) of clinicians opined as appropriate, while the remaining 2 (3%) of the enquirers reported that they received insufficient information and outdated information 2 (3%). For a question on non receipt of answers for their queries, 6 (9.6%) responded that they did not receive an answer. For a question on the quality of drug information centre around 37 (59.6%) rated as very good, 15 (24.19%) rated as good, 6 (9.6%) rated it as excellent and 4 (6.4%) rated it as satisfactory. Around 43 (69.3%) of clinicians rated communication skills of clinical pharmacists as excellent. Almost 53 (85.4%) of the respondents were found to be unaware of the online drug information service. Finally, 25 (40.3%) of the respondents felt that performance of the DIC can be improved further.

The performance over the years has improved from the time of inception (Table 4, 5). It summarizes the results of the performance of the drug information conducted by variety of drug information specialists. The number of queries received by the drug information centre has been decreased over the years and the good answering capability has been maintained throughout the years of working.

DISCUSSION

Among the 393 queries received during the study period, the greater percentage of the queries were from the medicine department. The clinicians utilized the drug information service to a larger extent compared to postgraduates, interns and other health care professionals. Most of the queries were received during ward rounds because larger number of students and the faculty members of the department of pharmacy practice participate in ward rounds of the medicine department which utilizes different categories of drugs creating the need for unbiased information. Drug information queries were also received via telephone and through direct access and most of the queries were utilized for better patient care followed by update of knowledge. Here again the queries required an immediate answer and hence the mode of reply was verbal. This result was comparable to the results of the study conducted by George *et al.* [8] From the results it is been found that the key purpose of drug information was in regard with adverse drug reactions, dosage/administration and drug therapy. This result was similar to the results of the studies conducted by Padma G M Rao *et al* [9] and George *et al* [8] at the same site. The main sources of reply were taken from secondary resources such as IDIS and Micromedex. This might be because of ready availability of Micromedex (computerized drug information database) and the ease of getting answers make Micromedex a standalone reference resource (Table 2).

Evaluation of quality of drug information service

Sample of Queries were evaluated according to predetermined, explicit and objective criteria using separate scales for judgmental and non-judgmental responses with rating from 1 to 5 (Table 3). Among the 25 judgmental enquiries (which require the highest degree of sophistication and clinical judgment) 96% were rated as either 'very good' or 'excellent'. A 'very good' rating meant the consultation had minor problems such as comprehensiveness, timeliness, documentation or writing. One response having four percentage shares was rated 'good' indicating significant deficiencies with regard to documentation, comprehensiveness, timeliness or other important aspects (Annex.2.a). Among the non-judgmental type, 25 queries were randomly selected and analyzed, 52% had a rating of 5 and 44% had a rating of 4. This indicates all responses satisfied the minimum acceptable level of quality. Non-judgmental responses did not require extensive searching and clinical judgment and thus the clinical pharmacist could answer such enquiries effectively (Annex.2.b).

The comparison of the qualitative assessments of the reported studies showed that, both the judgmental and non-judgmental queries answering has been improved over the time. [8-10] This study showed that results were comparable to the studies reported earlier from the same centre in the past (Table 4).

Outcome evaluation

In the survey conducted among the clinicians, eighty percent of the respondents were aware of the drug information service and almost more than ninety percent of them used it regularly. Almost all of the enquirers received the appropriate answer within an acceptable time. Regarding the question on rating on the communication skills of clinical pharmacist and the performance of drug information centre, majority of

the responders have rated both as very good. This shows the high functional capability of clinical pharmacists in the drug information centre. On the other hand some physicians have rated as satisfactory and poor respectively. This aspect has to be looked into and care has to be taken to find out and rectify the mistakes. Some of the suggestions to improve the performance of the centre were: provision of the latest information to all hospital departments, a 24 hr service, and increasing the interaction of clinical pharmacists and clinicians (Annex. 1).

The comparison of the present study with the previous reports on the outcome evaluation showed that the enquirers have been satisfied with the performance of the centre for its timeliness and appropriateness (Table 5).

The overall performance of the drug information centre is found to be good. This shows that the centre is consistently maintaining the quality of service.

CONCLUSION

Most of the queries answered by the centre were within the acceptable limits of quality. However, improvement in answering the judgmental enquiries is required. The results of the feedback questionnaire showed that most of the enquirers appreciated the quality of services provided and requested for a 24 hour round the clock service. With all these past performances it can be concluded that the centre has maintained quality and in future more studies should be conducted to assess the improvement in the performance.

Table 1

Most frequently used textbooks
• Mc Evoy GK, editor. AHFS drug information. Bethesda: American society of health system pharmacists; 2007.
• Parfitt K, editor. Martindale- The complete drug reference. 35th ed. London: Pharmaceutical press; 2007.
• Lacy CF, Armstrong LL, Goldman MP, Lance LL. Drug information handbook. 13th ed. Lexi comps; 2003.
• Stockley IH, editor. Drug interactions. 6th ed. London: Pharmaceutical press; 2002.
• Lawrence A Trissel, editor. Handbook of injectable drugs. 12th ed. Bethesda: American society of health-system pharmacists; ASHP 2003.
• Ellenhorn MJ, Barceloux DG. Ellenhorn's medical toxicology: Diagnosis and treatment of human poisoning. 2nd ed. Baltimore: Williams and Wilkins; 1997.
• Dukes MNG, JK Aronson. Meyler's side effects of drugs. 14th ed. Amsterdam: Elsevier; 2000.
• Briggs GG, Freeman RK, Yaffe SJ. Drugs in pregnancy and lactation. 7th ed. Philadelphia: Lippincott Williams and Wilkins; 2005.

Table 2: Quantitative assessment of the drug information queries

Categorization of query	Number of queries (%)
Specialty	
• Medicine	368 (93.6)
• Others	25 (6.3)
Status of the enquirer	
• Clinicians	355 (90.3)
• Postgraduate students	30 (7.6)
• Others	2 (0.5)
Mode of receipt	
• Ward rounds	242 (61.5)
• Direct access	32 (8.14)
• Telephone	119 (30.2)
• Intranet	1 (0.25)
Purpose of query	
• Better patient care	229 (58.2)
• Update the knowledge	166 (42.2)
• Education/Academic	3 (0.7)
Time frame for reply	
• Immediately	32 (82.4)
• Within 2-4 hours	25 (6.3)
• Within a day or two	44 (11.1)
Mode of reply	
• Verbal	346 (88)
• Verbal and written	8 (2)
• Printed literature	44 (11.1)
• Intranet	4 (1)
Type of query	
• Adverse drug reaction	106 (26.9)
• Drug therapy	68 (27.3)
• Dosage/Administration	86 (21.8)
• Drug interaction	49 (12.4)
• Cost/Availability	35 (8.9)
• Indication	19 (4.8)
• Pregnancy/Lactation	13 (3.3)
• Pharmacodynamics	1 (0.25)
• Pharmacokinetics	28 (7.1)
• Others	41 (10.4)
References	
• Textbooks	99 (25.1)
• MICROMEDEX	267 (67.9)
• Websites	71 (18)
• IDIS	2 (0.5)
• Others	61 (15.5)
• Journals	19 (4.8)

Table 3: Qualitative assessment and evaluation of randomly selected drug information queries.

Rating	Judgmental (n=25)	Non-judgmental (n=25)
5. Excellent	21 (84%)	13 (52%)
4. Very good	3 (12%)	11 (44%)
3. Good	1 (4%)	1 (4%)
2. Adequate	0	0
1.Unacceptable	0	0

Table 4: Comparative analysis of present study with previous years of study-

	Padma *et al*[9]	**Beena *et al*[8]**	**Rajan *et al*[10]**	**Present study**
Study period	6 months	12 months	6 months	13 months
Years of study	Sep 2002- Mar 2003	Jul 2003- Jun 2004	Aug 2006- Feb 2007	Jan 2008- Feb 2009
Total number of queries received	395 (65/month)	666(55/month)	322 (54/month)	393 (33/month)
Judgmental queries	25	10	25	25
Non-judgmental queries	25	10	25	25
Ratings of Judgmental queries No. (%)				
5	4 (16)	5 (50)	23 (92)	21 (84)
4	13 (52)	4 (40)	2 (8)	3 (12)
3	5 (20)	1 (10)	0	1 (4)
2	3 (12)	0	0	0
1	0	0	0	0
Ratings of Non-judgmental queries No. (%)				
5	4 (16)	5 (50)	13 (52)	13 (52)
4	11 (44)	5 (50)	12 (48)	11 (44)
3	10 (40)	0	0	1 (4)
2	0	0	0	0
1	0	0	0	0

Table 5: Comparision of outcome evaluations of different studies:

	Padma *et al*[9]	**Beena *et al*[8]**	**Rajan *et al*[10]**	**Present study**
Questionnaires distributed	75	40	100	80
Number of respondents	50	40	75	62
Awareness of the centre	48 (96%)	40 (100%)	56 (74.6%)	50 (80.6%)
Need for drug information			74 (98.6%)	60 (96.7%)
Purpose				
• **Better patient care**				45 (72.5%)
• **Updating knowledge**				10 (16.12%)
• **Educational/Academic betterment**				
• **All of the above**				
Utilization of the services	5 (10%)	37 (92.5%)	41 (54.6%)	33 (53.2%)
• **Regular use**			37 (90.2%)	30 (90.2%)
Appropriateness of the answers	49 (98%)	36 (90%)	71 (94.6%)	58 (93.6%)
Timeliness of reply				54 (87%)
Number of Enquiries not answered			11 (14.6%)	6 (9.6%)
Performance of the DIC				
• **Excellent**	26 (52%)		3 (4%)	6 (9.6%)
• **Very good**			45 (60%)	37 (59.6%)
• **Good**				15 (24.19%)
• **Satisfactory**			22 (29.3%)	4 (6.4%)
• **Poor**			5 (6.6%)	
Rating of communication skills			53 (70.6%)	43 (69.3%)
• **Excellent**				
Awareness on online drug information centre				53 (85.4%)
• **Utilization of this facility**				
Need for improvement				
• **yes**			28 (37.3%)	25(40.3%)

Annexure - 1

Sample form- (FEEDBACK QUESTIONNAIRE)

Department of Pharmacy Practice, Kasturba Hospital, Manipal.

1. Are you aware of Drug information centre functioning in our hospital?
   ☐ Yes ☐ No
2. Do you feel there is a need for Drug information service?
   ☐ Yes ☐ No

   If Yes, Do you think the Drug information services will help in
   a) Better patient care ☐ Yes ☐ No
   b) Updating Knowledge ☐ Yes ☐ No
   c) Educational/Academic betterment ☐ Yes ☐ No
   d) All of the above ☐ Yes ☐ No
3. Have you ever utilized the services of Drug information centre in our hospital?
   ☐ Yes ☐ No

   If yes, then how often?
   ☐ Regularly ☐ Sometimes
4. Have you received appropriate answers for your queries?
   ☐ Yes ☐ No

   If no, give reasons

   ☐ Outdated ☐ Not relevant ☐ Insufficient information

   ☐ Too extensive ☐ Others

5. Have you received appropriate answer within an acceptable time?
   ☐ Yes ☐ No
6. Is there any query for which you haven't received the answer?
   ☐ Yes ☐ No

   If yes, specify the number _____
7. How do you rate the performance of the DIC existing in our hospital?
   ☐ Excellent ☐ Satisfactory
   ☐ Very good ☐ Good
8. How do you rate the communication skills of clinical pharmacist?
   ☐ Excellent ☐ Satisfactory
   ☐ Very good ☐ Good
9. Are you aware of the online drug information service existing in our hospital?
   ☐ Yes ☐ No

   If yes, have you utilized this facility?
   ☐ Yes ☐ No
10. Do you think DIC can improve its performance? Please give suggestions
    ☐ Yes ☐ No

    If yes, please give suggestions:

Annexure.2.a. Quality Assurance forms

EVALUATION OF ASSURANCE FOR ENQUIRY ANSWERING

(JUDGMENTAL TYPE)

Query #:

Date:

Assessor:

DEMOGRAPHIC DATA

W the following information received noted?

100% of answer should be yes

	Yes	No
Full name		
Location		
Profession		
Data received		
Time received		
Time needed		
Address (if necessary)		
Fax (if necessary)		
Name the person who received the call		
Category of request		

BACKGROUND INFORMATION
Was the following background information needed?
100% of answer should be yes

	Yes	No
Patient specific information		
Adult/Child/Infant/Elderly		
Medication history		
Dosage/s		
Current disease state		
History of complications		
Time frame for reply		
Reason for question		
Context of question		
Confirm with enquirer that questions has been understood		

SEARCH STRATEGY
Were the following procedure carried out in search strategy?
100% of answer should be yes

	Yes	No
All relevant reference were be used		
Review at least two appropriate tertiary source		
Review at least two appropriate secondary source if necessary		
Retrieved the primary literature if necessary		
Consulted expected advisory, if necessary		

LITERATURE EVALUATION
Was the literature evaluated in the following manner?
100% of answer should be yes

	Yes	No
Various data source not a single were used		
Responder synthesized and evaluate the data (not merely summarized)		
Logical and coherent conclusion was reached		
References were in full detail, i.e. Title, Year, Edition, Date, Volume, Page number		
Indication made used were abstracts were use		
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

For all response	Yes	No
Time frame met for reply		
All reference supported by all reference		
Opinion 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 given is logically and unambiguously		
Complex information adequately explained		
Conclusion is given		

Written response	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 were necessary		
Verbal response		
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	2	3	4	5
Judgmental					

1) Significant deficiencies made the consultation unacceptable for use. The response was incorrect, inadequate, biased, and poorly documented.
2) Significant deficiencies with regard to documentation comprehensive, timeless 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) The consultation was very good but a minor problem with documentation, comprehensiveness, timeliness, writing or other important aspect existed.
5) The response was excellent, comprehensive and well written if applicable. An in depth literature search was required with synthesis and analysis of data that are not readily accessible in comprehensive reference textbook. This level is expected for most written consultation and for some oral consultation.

Annexure.2.b. Quality Assurance forms

EVALUATION OF ASSURANCE FOR ENQUIRY ANSWERING

(NON- JUDGMENTAL TYPE)

Query #:

Date:

Assessor:

DEMOGRAPHIC DATA

W the following information received noted?

100% of answer should be yes

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

BACKGROUND INFORMATION

Was the following background information needed?

100% of answer should be yes

	Yes	No
Patient specific information		
Time frame for reply		
Reason for question		
Context of question		
Confirm with enquirer that questions has been understood		

SEARCH STRATEGY

Were the following procedure carried out in search strategy?

100% of answer should be yes

	Yes	No
All relevant reference were be used		
Review 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 source not a single were used		
Logical and coherent conclusion was reached		
References were in full detail, i.e. Title, Year, Edition, Date, Volume, Page number		
Indication made used were abstracts were use		
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

For all response	Yes	No
Time frame met for reply		
All reference supported by all reference		
Opinion 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 given is logically and unambiguously		
Complex information adequately explained		
Conclusion is given		

Written response	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 were necessary		
Verbal response		
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	2	3	4	5
Judgmental					

1) Significant deficiencies made the consultation unacceptable for use. The response was incorrect, inadequate, biased, and poorly documented.
2) Significant deficiencies with regard to documentation comprehensive, timeless 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) The consultation was very good but a minor problem with documentation, comprehensiveness, timeliness, writing or other important aspect existed.
5) The response was excellent, comprehensive and well written if applicable. An in depth literature search was required with synthesis and analysis of data that are not readily accessible in comprehensive reference textbook. This level is expected for most written consultation and for some oral consultation.

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