Malaysian Journal of Library & Information Science, Vol.12, no. 1, July 2007: 83-96

ACADEMIC MEDICAL LIBRARIANS IN MALAYSIA: WHAT ROLES DO THEY PLAY?

Namita Santra
Stamford College Petaling Jaya, Wisma MCIS Annexe,
Jalan Barat, 46200 Petaling Jaya, Selangor, Malaysia.
E-mail:namita.santra@stamford.edu.my; namitasantra@yahoo.com

ABSTRACT
This study was conducted among academic medical librarians in Malaysia to learn what activities they were engaged in, their awareness of the skills and knowledge required for the emerging roles of medical librarianship and to find out their education and training needs. Face-to-face and telephone interviews were conducted with librarians attached to academic medical libraries in Malaysia. Results indicated that instructional roles had increasingly become part of the librarians' tasks. Activities that would have granted them some knowledge of the domain or expertise in searching specific medical information was missing. Awareness of the skills and knowledge of the emerging roles was poor. Training and education to specialize in the field was limited. It is recommended that creating opportunities for further training and education can establish a specialist group and improved performance.

Keywords: Medical librarianship; Health sciences librarians; Roles of librarians; Evidence-based librarianship; Academic libraries; Malaysia

INTRODUCTION

New information technologies, rapid growth of information and changes in the types and formats of information have had an impact on the librarians' tasks as well as users' needs. What was once the domain of the librarians only is now frequented by others, including the users. The *raison d'etre* of medical librarians has become a concern at a time when medical information is available in many forms and when libraries are not the only major source of academic information. Remote access to scholarly information and the ubiquity of medical information sources on the Internet have changed users' perceptions of medical libraries and librarians.

Commercial vendors can now provide custom-made information, and health professionals can now apply their domain knowledge in the process of information access and retrieval. However, medical information professionals, with the knowledge and skills of effective ways of organizing information, should not get marginalized

(Creth, 1993 and Braude, 2003). The Medical Library Association's (MLA) Education Policy Statement (MLA, 1992) called for an understanding of the importance of the new environment, when it said:

> *"…..librarians may be blindsided unless they understand the new environment's strategic impact on the profession. Many not aware of the changing environment and events may remain sidetracked by the events of time."*

To avoid being "blind-sided" or "sidetracked" by the developments of time (MLA, 1992) the need to extend the expertise in information management beyond the territory of traditional tasks has been envisaged for medical librarians. In their new roles, the traditional strength of librarianship is expanded in a medical information environment, especially in a clinical setting (Hersh, 2002) to emphasize the importance of the knowledge base in medical sciences that enable librarians to engage in knowledge-based information management. In this role, the tasks of the librarians are not just confined to direct users to sources or gather citations but filter, evaluate, and synthesize information to deliver evidence-based, accurate and timely information (Anderson, 1989). It is a move away from the traditional view that librarians manage the containers of information to the view that librarians now manage the content of information (Braude, 1993). As highlighted by Giuse et al. (1997), there is a need for concept-based rather than competency-based approach to education and training for medical librarians' requisite knowledge and skills sets.

The shift from print to digital storage of information and the subsequent technology to access it have had major effects on the traditional roles played by all librarians. As has been with other librarians, medical librarians too have evolved to adapt themselves to the new formats of storing information and the new methods of accessing this information. One example is that of their instructional roles. With the proliferation of end-user databases, end-user searching skills became a prerequisite and the task of training naturally fell into the domain of librarians. Medical librarians shifted their focus from supplying information to teaching patrons how to find the information themselves (Killingsworth, 2000). As pointed out by Eldredge (2000), tutoring has become a non-traditional role for medical librarians, but this is completely different from the role of traditional teaching. This tutor role requires patience, commitment and a profound understanding of the curriculum as it relates to library and informatics services, prompting an integrated model of library instruction. Willingness to meet the challenges of tutoring can make medical librarians successful in this non-traditional role. Added to this new instructional role are the emerging roles in non traditional areas of information

technology. To extend their services beyond the four walls, librarians now are assisting in developing user-friendly databases and anticipating the information needs of patrons by providing personalized Web pages, and creating portals that link patrons to the resources pertinent to their interest (Scherrer, 2004).

While increased instructional roles and involvement in computer technology have been observed among all librarians, medical librarians in their emerging roles are envisaged to develop skills that are knowledge-based and evidence-based. Mentioned in context of the changing role of medical librarians are medical informationists (Davidoff and Florance, 2000) who with domain knowledge and familiarity of Evidence-Based Medicine (EBM), engage in tasks that focus on creating tools to access information and apply the best evidence for making clinical decision.(Creth, 1993 and Detlefsen, 2004). Closely liked to medical informatics is the increased participation in Evidence-Based Librarianship that consists of formulating practical questions and finding the right level of evidence needed in time to answer the question (Eldredge, 2000 and Greenhalgh, 2002). To search for evidence-based literature would be to look for such information that has been filtered and synthesized from the best scientific research, is based on evidence that is empirically sound and verifiable and is often applied at the point-of-need (Grandage, Slawson and Shaughnessy, 2002 and Dalrymple, 2003). For medical librarians, the need to get familiar with this evidence-based literature as found in Cochrane Database of Systematic Review, Database of Abstracts of Reviews of Effectiveness (DARE), American College of Physicians (ACP) Journal is necessary (Hersh, 2002, and Scherrer and Dorsch, 1996). A growing trend of using problem-based learning method to supplement or replace traditional lecture-based courses for the medical students in classrooms (Miller, 2001) increases the use of EBM literature and subsequently an increased demand for Evidence–Based librarianship. At the same time gaining in importance is also context-based librarianship or Clinical Librarianship, where clinical librarians work with a clinical team, understand the information needs of health professionals and provide them with information that goes into making clinical decisions. It is a continuous learning process of acquiring new knowledge in natural setting (Florance, Guise, and Ketchell, 2002).

Training and education for Medical Librarians becomes imperative in this environment of change that is taking place. While library schools are the starting point for all information professionals to learn about the organization of information and to disseminate pertinent information to meet client needs (Homan and McGowen, 2002), those who want to become medical librarians need more training, as they will serve a professional clientele with specialized needs. Additional coursework and internship in medical terminology and bio-statistics would enhance the health sciences information professions' ability to meet the specialized in formation needs (Homan and McGowen,

2002 and Detlefsen, 2004). One path of learning for medical librarians is to apply the concepts of informal, self-directed, lifelong learning to their own careers (Jones, 1994). The reference technique is one of those self-directed learning avenues that equip librarians with the conceptual skills to develop "creative solutions to information management problems" (Jones, 1994). Another approach to education and training as referred to by Homan and McGowan (2002) is the initiatives provided by organizations like MLA. Continuing education programmes like those offered by MLA provides its members with training opportunities to achieve new skills and competencies. With the available technical support, more and more clinicians are using knowledge-based information at the point of care to improve clinical decisions (Kronenfeld, 2005). Training medical librarians, especially clinical librarians in the methods of EBM is vital. Scherrer, (2006) pointed out the need for continuing education to provide the skills and confidence that medical librarians will need to be involved in EBM process. The emerging role of the "informationist" will demand for more intensive training in EBM concepts, particularly in critical analysis of the literature.

As Malaysia strives to become a developed country, with a corresponding development of its medical services, it is vital that medical librarians play a role in this development. What roles are medical librarians in Malaysia playing? How aware are they of emerging roles in medical librarianship? What are the training and educational needs of the medical librarians? These were some of the questions that this study sought to answer.

METHODOLOGY

This study required the understanding of an area in which no prior research could be located in Malaysia. In order to get in-depth information, an interview survey with open-ended questions was chosen as the method for data collection. Interviews, both face-to-face and on telephone, were conducted to collect data for this study. A common open-ended question guide was developed as a guide for the interviewer to follow through in the process of data collection. The present questionnaire was developed in accordance with the objectives of the study and was divided into three sections. The first section focused on the roles played in recent years, the second on the awareness of the emerging trends of medical librarianship, and the third on the educational and training aspects of medical librarianship. The question guide is attached as Appendix A.

Only those designated as "librarians" and attached to academic medical library were chosen for interviews. They were professionals with formal degrees or diplomas in the field of library and in formation science. Only academic medical librarians were chosen as samples as they are able to serve a wide spectrum of users who include students,

interns, researchers, physicians, and academics. By serving a variety of clients whose needs are different, these medical librarians are able to engage in a variety of tasks. They are in a better position to understand the changing needs and demands of the medical information services and response

A total of twenty-one academic medical librarians were identified. Of these twenty-one librarians contacted, eighteen responded, giving a response rate of 85.7%. It was possible to conduct these interviews, as the number of academic medical librarians in Malaysia is small.

The responses of the interviewees were written down as accurately as possible by keeping close to the words and phrases used by them. No tape-recorder was used to record the answers as it was felt that its use would inhibit the speakers and make the respondents speak less freely. As the number of interviewees was small it was possible to write down the responses and later compile those responses by each section of the question guide.

Responses were analysed section by section. Being qualitative in nature, no exact measurement of the outcome could be arrived at for this study. The result is thus, based on the common ideas and words (and their synonyms) found in the responses of the interviewees. An attempt has been made to establish a pattern that emerges from the over all responses. Extra information provided beyond the general pattern of the responses was also reported in the result.

In the process of analysing the data, the responses from each interviewee were compiled in three categories corresponding to the three sections of the questionnaire. Next, all the responses of each category were compared and analysed. The use of words, terms and phrases in that particular category were noted carefully. As the open-ended questions encouraged the respondents to speak freely, any additional comments made in the related category were compiled carefully and reported in the findings. All findings have been reported exactly according to the sections and sub-sections laid down in the questionnaire.

FINDINGS

Current Activities

It was found that 66% of the respondents were engaged in instructional roles and this ranked the highest among current activities listed in the questionnaire. Conducting information skill classes was found to be the main instructional task. Other informal but regular instructional activities mentioned were “help users how to search,” “teach how to

use databases", "guide users to sources of information" "conduct training upon request", or "OPAC search".

The results showed that 50 % of the respondents were involved in acquisition and a considerable portion of the budget was spent on the acquisition of online database. With these electronic resources, skills related to instruction and databases searching became necessary. This can be related to the significant instructional role played by the respondents (66%). Also, the need for training in database searching ranked high when asked about training needs. Of the librarians interviewed, 55.5% mentioned that training in database searching would be of great help.

Cataloguing ranked as the third among current activities engaged in by the respondent. Cataloguing was confined to print materials. No mention was made of cataloguing of Internet sources. About 44% of the interviewees were involved in cataloguing. A majority of the respondents used Medical Subject Head (MeSH) and National Library of Medicine (NLM) classification for cataloguing. Though copy cataloguing was commonly undertaken, some idea and experience of medical subjects was thought to be essential in cataloguing medical information sources.

There was a conspicuous absence of reference services among the libraries included in the study. A total of 94.5% respondents said that they were not engaged in reference service as an independent activity. It was pointed out that reference services were mainly to direct the users to the sources of information and, as mentioned by one respondent, in the form of simple questions like "Where can I find this book?" "How do I use the computer?" It showed that reference service was more in the nature of instructional services where the librarians felt the need for guiding and instructing the user. The same views were expressed about mediated searching. The term "mediated searching" had to be explained to the majority of the respondents of this study, which suggested that very little mediated searching was carried out. Responses most often were "rarely" or "never". It was pointed out that librarians acted more as intermediaries than mediated searchers.

In terms of Web-related activities, it was found that they remained at a general level, used mainly for the purpose of communication through e-mail services and general information searching as mentioned by 16 (89%) of the respondents. Only two (11.1%) respondents were directly involved in web-related activities that included creating, maintaining, and updating web pages. New web-related activities like using web portals, building customized web-pages, or building database driven websites were not taken up.

Awareness of the Skills and Knowledge of Emerging Roles

In general, respondents agreed that expertise in information technology was definitely an important aspect among medical librarians, not only in their emerging roles, but also in their present roles. All respondents were already part of this development with library services having become computer-based and many of the sources and format of information becoming electronic. A very high percentage of the respondents (80%) were aware that web-activities related to web-page creation for the library, or building web-portal, or web-referencing would be part of the roles played by emerging librarians. Many (80%), however, felt that these tasks would be better left to the experts in the field like system designers or system developers, and not to the librarians.

Answering questions related to the skills and knowledge of the emerging roles, 77.7% of the respondents pointed out that medical sciences being a special field, some knowledge of the field was definitely necessary, as envisaged in the changing roles of medical librarians. While all the respondents of the present study perceived the importance of subject knowledge, it was mainly for tasks they were already engaged in. It was not for the specialists' tasks of filtering, working with evidence-based literature or answering clinical questions.

Responding to the questions regarding Evidence-Based Medicine (EBM), about 44.4% of the respondents were aware of EBM. Three statements related to EBM were presented to find out the librarians' awareness of the practice of EBM. The first statement was about familiarity with EBM in general, the second about familiarity with EBM literature sources like Cochrane databases, ACP Journal Club, or DARE and the third about familiarity with meta-analysis or systematic reviews. Only two were quite knowledgeable about details of EBM and could relate it to EBM literature and systematic reviews.

The notion of clinical librarianship or librarians working closely with physicians on clinical rounds was something new to most of the librarians interviewed. Only 44.4% mentioned some idea about this area of medical librarianship. Although not very familiar, the advantages and strengths of such programmes were noted by many (80%). It was mentioned that this method of direct interaction with the users in the context of their needs and delivering that information would be a boost to the profession of medical librarianship and that this would be an ideal environment to gain experience in a practical setting.

The concept of filtering or synthesizing information for ready use by physicians, very often pointed out for the emerging roles, was not clear to the respondents. It had to be

explained in detail. About 22% had some familiarity with this task. It was pointed out that if medical librarians were not trained and had no subject knowledge, it would be difficult to filter or synthesize information. In fact, 80 % felt it was a difficult undertaking for librarians and should be left to the users. Answering problem- based questions was also seen in the same light. Only 10 % of the respondents were familiar with this concept. It was felt that users of medical libraries lack faith in librarians to get an answer for a specific problem, as the expertise and experience that go into answering such questions are not generally present in the librarians.

Education and Training

All interviewees were chosen according to the designation of "librarians". All had professional degrees, diplomas or their equivalent in Library and Information Science. However, there was no specialization in medical librarianship in the Degrees or Diplomas undertaken. The respondents had a foundation in the core skills acquired through library school education, but not the advanced skills (expertise in evidence-based medicine or problem-based information retrieval technique) required for the new role model of medical librarians.

On-the-job training programmes especially related to medical librarianship were very few and limited concentrating mainly on training in database searching sessions. Six respondents mentioned going for training sessions conducted regularly by either Ovid or Proquest database representatives. Often, these sessions were meant for the librarians as well as the users and were generally ½ day or 1-day training sessions. No mention was made about any formal training or educational courses offered by institutions of higher learning for specialization in medical librarianship. Neither was there any mention of continuing education offered in specific areas of medical librarianship by institutions. Courses on specific skills like problem-based information retrieval, filtering and synthesizing information, evidence-based medicine were not extended either as short courses or as part of a university curriculum in library and information science programmes.

Training needs were specified for those areas in which the respondents were familiar with and already engaged in like database searching (55.5%) and cataloguing (44.4%). Training for knowledge-based skills, such as filtering and synthesizing or answering problem-based questions were not asked for. About 16% asked for training in EBM. However, 50 % of the respondents requested for training in technical activities such as advanced web tasks, which include web page creation, and building portals. In response to the question on the types of courses that should be offered, eight respondents said they preferred certificate courses in medical librarianship after a degree in librarianship from

the library science schools. Five respondents preferred a degree course with specialization in medical librarianship offered at the university level. Other types of courses mentioned were short courses run by either universities, librarians' group such as the Medical Librarians' Group (MLG) of the Librarians Association of Malaysia (*Persatuan Perpustakaan Malaysia* (PPM)) or the National Library of Malaysia, established medical libraries, or librarians themselves.

All respondents felt that certifying the profession of medical librarianship would be good. It was pointed out that in Malaysia, medical librarians did not hold any special status. They were medical librarians by virtue of working in a medical library. All felt that a certification, which could be awarded by Ministry of Health or PPM, would be a boost to the profession. It was also mentioned that a certification of the profession would mean higher remunerations and that would attract more to join the workforce. As mentioned by one librarian, medical librarians need to take "pride" in their profession to establish themselves professionally. Certification could help increase professional values and users' confidence.

CONCLUSIONS

Due to the lack of specialized training and demand for specialist services, current activities of the medical librarians in Malaysia have remained at a general level. With the main activities centring on directing or guiding users to resources, their focus is on managing the container of information rather than content. They are not involved in reference services or mediated searching that would have granted some knowledge of the domain or expertise in searching specific medical information.

The tasks of synthesizing, appraising information, answering problem-based questions, or taking part in the process of EBM – skills envisaged for the emerging medical librarians have largely remained vague to the respondents. Most respondents felt that these are tasks best left to those who are specialists in the medical field. Lack of information and training for these skills as well as lack of demand for such services, have resulted in the limited awareness of the emerging roles. Major developments in the field medical librarianship or medical informatics are yet to be perceived by the medical librarians in Malaysia.

Training and educational opportunities for academic medical librarians are very limited. Without any formal degree or training in medical librarianship, their knowledge and familiarity of medical information sources and services is gained from experience. They are medical librarians by virtue of working in an academic medical library and not a

special group of librarians because of the special skills and knowledge they hold in medical information services.

RECOMMENDATIONS

An increased awareness about the developments in their profession is needed among the librarians. This can be carried out through participation in seminars, workshops and talks conducted regularly by the Medical Librarians' Group (MLG) of the Librarians Association of Malaysia (*Persatuan Perpustakaan Malaysia* (PPM)), the National Library of Malaysia, or individual libraries. Reading or research should also be encouraged to know the developments taking place in other places.

Professional qualification specific to medical librarianship will be good for medical librarians to acquire the skills and knowledge specific to medical librarianship and prepare them to work in medical information services environment. Library schools can look into this and design certificate or diploma programmes, if not a specialized degree programme. This will be of great help as medical information management is a specialized area and proper training will result in highly professional performance. Short training courses in basic concepts of medical sciences, cataloguing with MeSH and NLM classification, EBM, clinical information services or handling problem-based questions should be available to the librarians. Also important are training courses in advanced computer skills like databases management, management of Internet sources, electronic publishing, portal creation as well as skills in web referencing.

Reference service is an important way to gain experience in the specialized field in which medical librarians work, but this is not commonly found in the libraries included in the study. It is, therefore, recommended that these libraries carry out studies to find out what kind of reference services are required by their users and look into establishing formal reference services if there is none in the library.

There should be a formal recognition of medical librarians' specialty. Librarians working in this area provide services that are special. This specialty in their field needs to be recognized to give them profession credit. PPM and MLG can work together to award this recognition based on certain standards and achievements. This could be related to the certificate, diploma or degree courses taken to specialize in medical librarianship. This certification will also add to their job satisfaction and motivate them for improvement. Recognition would also mean increased trust and faith in the librarians' capability.

It must be promoted that that librarians with their professional expertise in information access and retrieval can make a difference. The ubiquitous presence of information and its availability nowadays often lead the users to be confident about their ability to access and retrieve information. However, medical libraries must highlight the fact that professional expertise is needed to authenticate and to find out the accuracy of medical information. It must also be promoted that professional searching skills are necessary.

As this study did not take into account users' information needs in context of the services provided by academic medical libraries, future studies can be conducted to find out the users needs in medical libraries. It would be helpful in providing information on how the librarians can improve upon their skills to serve their clienteles better.

REFERENCES

Anderson R. K. 1989. Reinventing the medical librarian. *Bulletin of the Medical* Library Association. Vol 77, no. 4: 323-43

Braude R M and Samuel J Wood. 1993. Impact of information technology on the role of health science librarians. *Bulletin of Medical Library Association*. Vol 81, no.4: 408-413

Braude, R M. 2003. On the origin of a species: evolution of health sciences librarianship. *Journal of the Medical Library Association*. Vol 85, no.1: 1-10

Creth, Sheila D. 1993. The health information environment: a view of organizational and professional needs and priorities. *Bulletin of Medical Library Association*. Vol 8, no.4 : 414-420.

Dalrymple, Prudence W. 2003. Improving healthcare through information: research challenges for health science librarians. *Library Trends*. Vol 51, no. i4: 525 – 542.

Davidoff, F. and V Florance. 2000. The informationist: a new health profession *Annals of Internal Medicine.* Vol. 132, no 12 : 996–998.

Detlefsen, Ellen G. 2002. The education of informationists: form the perspective of a library and information science educator. *Journal of the Medical Library Association.* Vol. 90 no.1: 59-67.

Eldredge, Jonathan D. 2000. Evidence-Based librarianship: an overview. *Journal of the Medical Library Association.* Vol 8, no. 4: 298-302.

Eldredge, JD. 2004. The librarian as tutor/facilitator in a problem-based learning (PBL) curriculum. *Reference Services Review.* Vol 32, no.1: 54 - 59

Florance Valerie and Nina W. Matheson. 1993. The health sciences librarian as knowledge worker. *Library Trends*. Vol 42, no. 1: 196-220

Florance, V., N. Guise and D. Ketchell. 2002. Information in context: integrating information specialists into practice settings. *Journal of the Medical Library Association*. Vol 90, no.1: 49-58.

Giuse, N. B., J. T. Huber, D. A. Giuse, S. R. Kafantaris, M. D. Miller, D. E. Giles, R.A. Miller, and W. W. Stead.1997. Preparing librarians to meet the challenges of today's health care environment. *Journal of American Medical Informatics Association*. Vol 4, no.1: 57-67

Grandage K Karen, David C. Slawson and Allen F. Shaughnessy. 2002. When less is more: a practical approach to searching for evidence-based answers. *Journal of the Medical Library Association*.; Vol 90, no 3: 298-304.

Greenhalgh T, J. Hughes, C. Humphrey and P. Martin. 2002. A comparative study of two models of a clinical informationist service *British Medical Journal*. Vol 324, no 77336 : 524 - 529. Available at: http://www.pubmedcentral.nih.gov/ articlerender.fcgi?tool=pmccentrez&artid=67768

Hersh, William. 2002. Medical informatics education: an alternative pathway for training informationists. *Journal of the Medical Library Association*. Vol 90, no1: 76-79.

Homan, J. Michael and Julie J. McGowen. 2002. The Medical Library Association:promoting new roles for the health information professionals. *Journal of the Medical Library Association*. Vol 90, no.2 : 80-85.

Jones C.J. 1993. Charting a path for health sciences librarians in an integrated information environment. *Bulletin of Medical Library association* . Vol 81, no. 4: 421-424. Erratum in: Bull Medical Library Association 1994 Jul; Vol. 82, no. 3:356

Killingsworth, Elizabeth K. 2000. Evolution of clinical librarianship: adapting to a changing environment. *Journal of the Educational Media and Library Sciences*. Vol. 3793: 265-274.

Kronenfeld Michael R.2005. Trends in academic health sciences libraries and their emergence as the "knowledge nexus" for their academic health centers. *Journal of the Medical Library Association*. Vol 93, no.1 : 32 - 39

Medical Library Association. 1992. *Platform For Change*. Chicago: The Association

Miller, J.M. 2001. A framework for the multiple roles of librarians in problem-based learning. *edical Reference Services Quarterly*. Vol. 20, no. 3: 23-30.

Scherrer, Carol S. and Susan Jacobson. 2002. New measures for new roles: defining and measuring the current practices of health sciences librarians. *Journal of the Medical Library Association*. Vol 90, no. 2: 162-172.

Scherrer, S.C., and J.L Dorsch. 1999. The evolving role of the librarian in evidence-based medicine. *Bulletin of Medical Library Association*. Vol. 87, no. 3: 322- 328

Scherrer, S.C., and J.L Dorsch. 2006. An evaluation of a collaborative model for preparing evidence-based medicine teachers. *Journal of the Medical Library Association*. Vol. 94, no. 2 : 195-165.

APPENDIX A : INTERVIEW GUIDE

Academic Medical Librarians in Malaysia: What Roles Do They Play?

This survey, based on interviews, is undertaken to find out:
1. The roles played by medical librarians in academic medical libraries of Malaysia.
2. Their awareness of the knowledge and skills of emerging roles in medical librarianship.
3. Their educational and training needs.

The following questions act as a guide to elicit responses from the respondents. However, responses need not be restricted to the questions asked. Any comments or views related to the area of study are most welcome.

A. Current activities

Please indicate your current activities in relation to the followings:

1. Acquisition
2. Organization
3. Reference service
4. Mediated searching
5. Instructional roles
6. Web related activities
7. Others

B. Emerging roles

Are you aware of the following skills and knowledge of the emerging roles in medical librarianship?

1. Medical librarians are required to have some core knowledge of medical sciences.
2. Medical librarians need to filter, synthesize and appraise information for ready use.
3. Medical librarians are able to answer specific questions – problem based / clinical.
4. Medical librarians working in a clinical team in order to understand the information needs of the health professionals.
5. Medical librarians working in a clinical team in order to gain experience in practical setting and gain better understanding of the subject.
6. Medical librarians are knowledgeable about Evidence Based Medicine.
7. Medical librarians familiar with Evidence based literature like Cochrane Database, APC
8. They are familiar with meta-analysis and systematic reviews that help them to find out the best evidence.
9. They have the skills and experience in web-related activities like Web page designing, Web referencing, creating Web portals
10. They are competent in the use of information technology and database management.

C. Education and Training

1. What is your educational background?
2. Did you have any special training in medical librarianship before you started working as a medical librarian?
3. Have you attended any courses on job to enhance your skills in medical librarianship? What are they?
4. What prompted you to attend courses on medical librarianship?
5. Comment on the courses you have attended in terms of
   a. topics covered
   b. duration
   c. effectiveness
6. Comment on the following items in relation to the needs of education and training:
   a. Areas are to be covered for the education or training of medical librarianship.
   b. Types of courses recommended (certificate, diploma, degree etc)
   c. Who do you think should conduct the courses?
   d. Your opinion about certification of the profession of medical librarianship in relation to the courses offered.