CLINICAL LIBRARIAN SERVICE IN THE PHILIPPINES: EXPERIENCE IN A CRITICAL CARE SETTING OF A TERTIARY HOSPITAL

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Abstract

Considered as the earliest form of embedded librarianship, a clinical librarian service/program involves the provision of information directly at the point of care. Being at the place where patient care is being delivered, the clinical librarian can provide specialized and timely information to health care professionals. Numerous studies on the potential, benefits, and effectiveness of clinical librarianship have been published. However, its practice and implementation in most hospitals around the world, especially in the Philippines, is not yet prevalent. This case study describes the experiences of a clinical librarian in a critical care unit of a private tertiary hospital in Quezon City from 2013 up to 2018. Roles and activities performed by the clinical librarian in the neurocritical care unit are presented. Recommendations on establishing a clinical librarian service, particularly in the Philippines, are discussed.

Keywords: *clinical librarianship, embedded librarianship, clinical librarian service, informationist*

Introduction

The concept of a clinical librarian (or clinical medical librarian) started in 1971, with Gertrude Lamb establishing the first clinical librarian program at the University of Missouri-Kansas City School of Medicine (Algermissen, 1974). Acari and Lamb (as cited in Lipscomb, 2000) described the role of a clinical librarian in its inception:

> a medical librarian is assigned to an inpatient service and attends rounds
> and conferences with the patient-care team. The clinical librarian searches

current medical literature for answers to questions relating to patient care and management and provides the clinicians on her assigned hospital service with relevant articles. (p. 393)

There are three main variations of a clinical librarian service, according to Killingsworth (2000): 1) it could be one of the main services of a health sciences library or supplemental to its traditional reference department; 2) it could be an integral part of the hospital; and 3) it coexists with a traditional reference service at a large academic medical center. Common to all of the aforementioned variations is the idea that the clinical librarian provides his services at the areas of designation—beyond the premises of the health sciences library. Which is why Shumaker (2010) considered the practice of clinical librarianship as the earliest form of embedded librarianship.

Since the previous years, the role of the clinical librarian continues to evolve. Based on the survey of clinical librarians in the United Kingdom, Harrison and Beraquet (2009) identified the following activities done by clinical librarians:

1. Performing information searching;
2. Promoting/marketing service;
3. Attending case conferences and clinical meetings;
4. Providing search skills training;
5. Performing critical appraisal;
6. Attending ward rounds; and
7. Developing clinical guidelines.

In addition, Tan and Maggio (2013) identified the following roles performed by clinical librarians embedded in a clinical team: 1) expert searcher; 2) teacher; 3) content manager; and 4) patient advocate. As expert searchers, clinical librarians are expected to search the entire literature—both published and unpublished. Like any librarian, clinical librarians can contribute in increasing the health information literacy skill of their clients, by conducting training sessions or lectures on bibliographic database searching and proper citation making. Clinical librarians may also maintain a repository of electronic information resources, the content of which are specifically tailored for their clients, as another channel for disseminating information resources. As patient advocates, clinical librarians may also provide services to patients and their families by disseminating consumer health information resources—health information resources that were written or created in the language easily understood by non-health professionals.

Although there are various activities and roles done by clinical librarians, mentioned by Harrison and Beraquet (2009) and Tan and Maggio (2013), not every clinical librarian assumes or performs every activity mentioned. Clinical librarians spend a significant number of hours per searching for information on behalf of their clients (Harrison & Beraquet, 2009). However, the findings of Tan and Maggio (2013) indicate that critical appraisal and instruction (e.g. search strategies) are

done by only a select number of librarians. Frequency of attendance in rounds could be in a daily, weekly, monthly, or quarterly basis, or as needed. And while some clinical librarians attend other meetings (e.g. case conferences, grand rounds, morbidity and mortality conferences), most of them only attend ward rounds. It can be said that the range of activities done by clinical librarians, over the years since it was conceptualized by Lamb, depend on the department or team they are assigned to

Various studies have been published on the impact and benefits of clinical librarian services. An introduction of a clinical librarian service in a clinical team may increase the willingness of health professionals in a clinical team to search for information regarding patient care themselves, or delegate the task of information searching to the clinical librarian (Urquhart, Turner, Durbin, & Ryan, 2007). Collaboration between residents and clinical librarians on literature searching and critical appraisal for morbidity and mortality conferences have produced higher-quality evidence-based reviews by residents, as compared to those without the assistance of clinical librarians (Greco et al., 2009). Clinical librarians have a positive impact on better informed decisions and higher quality patient care (Brettle et al., 2010). Also, the presence of clinical librarians during inpatient rounds are perceived to improve the skills on evidence-based medicine of clinicians (Brian et al., 2018).

International discussions concentrated on clinical librarianship have been ongoing since 2002, with the first Clinical Librarian Conference in the United Kingdom. The latest International Clinical Librarian Conference was held on September 21-22, 2017 in Leicester, England (International Clinical Librarian Conference, 2017). Other venues for academic and professional discourses on clinical librarianship include the annual conferences of the Medical Library Association in the United States.

The number of practicing clinical librarians has grown in the past years (Roper, 2015). In addition, the National Health Service of the United Kingdom aims to implement the practice of clinical librarians as a standard in their library and knowledge services (Health Education England, 2015). However, in many countries, including the Philippines, clinical librarian services are still very limited, if not, non-existent. This is in spite of the availability of case studies and systematic reviews detailing the effectiveness of clinical librarian services, such as those by Wagner and Byrd (2004) and Brettle et al. (2010).

In 2013, the author thought that it has been more than 40 years since Lamb started the clinical librarianship concept in the United States. While working as a research assistant for a neurointensivist (a physician specializing in neurocritical care) of a private tertiary hospital for a personal research project, he proposed the concept of clinical librarianship and offered to assume the role of clinical librarian for the service to be established in one of the intensive care units in the hospital, which the neurointensivist heads. The service has been ongoing since that year, and continues up to this date.

This paper presents the roles and experiences of a clinical librarian in a critical/intensive care unit setting in the Philippines from March 2013 up to November 2018. This case study documents the

activities done by the clinical librarian, since the inception of the clinical librarian service in the critical care up to the present, through presentation of narratives regarding particular incidents, such as preparations for the establishment of the service, collaborative activities between the clinical librarian and the member of the clinical team, and contributions of the clinical librarian beyond the needs of the critical care unit.

Clinical Librarian Service in the Neurocritical Care Unit

The neurocritical care unit (NCCU) of St. Luke's Medical Center-Quezon City is a 7-bed specialized unit, which provides intensive treatment for patients with life-threatening neurological and neurosurgical disorders. Established in 2005, it is considered as the first in the Philippines. It is located at the third floor of the main hospital building, along with the ward, offices, and other units of the Institute for Neurosciences.

Currently, the following comprises the staff of NCCU: neurointensivist; neurohospitalist; nurses; ward clerk; and nurse assistants. Neurology residents, medical interns and medical clerks rotate in the NCCU every month. A fellow also joins the clinical team, when there is one undergoing fellowship training in neurocritical care, under the supervision of the head of the neurocritical care fellowship training program, who is also the neurointensivist of the NCCU.

According to the admission records of the NCCU from 2013 to 2017, there were about 1,200 patients admitted in the unit. The top five cases admitted in the unit for the same period are as follows, in order of prevalence: 1) brain infarction; 2) intracranial hemorrhage; 3) central nervous system neoplasm; 4) subarachnoid hemorrhage; and 5) seizure disorder.

The NCCU Clinical Librarian Service started in March 2013 as a pilot program for a period of six months (Santos & Mariano, 2014). As mentioned in the previous paragraphs, the idea of establishing the service was proposed by the author to the neurointensivist while working as her research assistant. Since the scope of the job of the author as research assistant primarily involves literature searching, the author proposed that the entire NCCU could also benefit from his services, as a clinical librarian rather than a research assistant. The neurointensivist agreed to the proposal, with her personally funding the service. The following are the objectives of the service:

- Prompt clinicians, nurses, and pharmacists to seek the evidence to support patient care by becoming an integral part of the clinical team, present in daily unit rounds and regular clinical meetings;
- Ensure that questions arising in clinical encounters are answered on the basis of evidence from the published literature through evidence-based literature searches for patient care queries;
- Reduce information overload by providing the most pertinent medical information resource; and
- Support the future care of patients by providing evidence for the formulation of new

clinical practice guidelines.

To assume the role, the clinical librarian had to make the necessary preparations. Having a background in the health sciences (i.e. undergraduate degree in nursing) is an advantage, with respect to the needed knowledge in comprehensive medical terminology, the health care environment, and neurological disorders. He had to refine his literature searching skills and familiarize himself with medical information resources, such as electronic databases and point-of-care resources (e.g., PubMed/MEDLINE, UpToDate, ClinicalKey AccessMedicine, DynaMed Plus, CINAHL, Ovid). He has a tablet computer with him at all times, readily available to search for information resources in the Web during and after the multidisciplinary rounds.

To better integrate with the clinical team, the clinical librarian proposed to the neurointensivist that the clinical librarian wear a white lab coat while on duty in the NCCU, especially during multidisciplinary rounds—a practice similar to the clinical librarians rounding at Truman Medical Center-Hospital Hill (Burdick, 2004). To avoid confusing the clinical librarian as a physician or a health care professional, the white lab coat does not bear the logo of the hospital, the name of the hospital, nor his full name—which is how the white coat of health care professionals in the hospital are designed. The neurointensivist agreed with the said proposal.

Attendance in Multidisciplinary Rounds

The clinical librarian attended the morning multidisciplinary rounds, along with the other members of the clinical team. Details regarding all admitted patients are discussed during multidisciplinary rounds. The neurointensivist (or the neurohospitalist, in her absence) presides over the rounds, with the other clinical team members gathered around her in a semi-circle formation. The neurology resident, along with the medical intern and nurses, reports all cases handled by the NCCU for the day. The clinical librarian, with a tablet computer at hand connected to the Internet, listens to the discussions, as he anticipates for a needed information. When a clinical question is raised during rounds, the clinical librarian quickly searches for evidence such as clinical studies, systematic reviews, and practice guidelines in medical databases, then reports to the clinical team the information he retrieved. Sometimes, the neurointensivist or any member of the clinical team would ask the clinical librarian to retrieve information resources after rounds. The clinical librarian would then send all pertinent information to the requester through email, preferably within 24 to 48 hours.

Constant Availability for Consultation

The benefit of having a clinical librarian in the NCCU is that it gives an impression to the NCCU staff that there is someone who can be consulted for authoritative information (Santos & Mariano, 2014). Also, the clinical librarian can immediately assist any member of the clinical team in searching for evidence. However, clinical questions may arise at any given day or time in intensive care units, such as the NCCU. To address that concern, the clinical librarian, aside from being physically available in the NCCU on a regular schedule, is available for consultation through mobile phone or e-

mail, at any time.

Similar practice in other clinical librarian services in other countries generally assign one clinical librarian per clinical team or department. For example, the clinical librarian service of Eskind Biomedical Library in Vanderbilt University Medical Center assigned one librarian each for the medical intensive care unit, the neonatal intensive care unit, the hematology/oncology myelosuppression unit, and the clinical research center (Giuse et al., 1998). Also, as evidenced by other existing studies describing the experiences of clinical librarians in the hospital setting (Veenstra & Gluck, 1992; Morley & Buchanan, 2001; Reid, Ikkos, & Hopkins, 2002; Brown, 2004; Burdick, 2004; McShea, 2006; Greco et al., 2009; Vaughn; 2009; Esparza, 2010; Gorring, Turner, Day, Vassilas, & Aynsley, 2010; Watson & Weist, 2010; Aitken, Powelson, Reaume, & Ghali, 2011; Sulimanoff, Hernandez, & Gibson, 2011; Esparza, Shi, McLarty, Comegys, & Banks, 2013), it is common to find a single clinical librarian serving a handful of clinical teams, units, and/or departments in their respective institution. This is primary due to the willingness of a department/unit to accommodate the idea of a librarian providing direct information services in their immediate area, the perceived need of departments/units for the services of a clinical librarian, and the available budget of the institution or its library to designate or hire one/additional clinical librarian/s.

Management of Information Resources

Each search request received by the clinical librarian is documented using a mediated literature search form. Information contained in the said form include a short description of the information for retrieval, the type of intervention in the study, publication type of the study, applicable age group of the study, and topics to be excluded from the search. Electronic copies of the retrieved information resources (e.g. journal articles, practice guidelines) are organized in folders labelled with the search topic, to facilitate retrieval when future search requests are similar to those accomplished earlier.

Literature Search and Critical Appraisal Process

Performing information searching is one of the major activities done by clinical librarians (Cimpl, 1985; Harrison & Beraquet, 2009; Tan & Maggio, 2013). As any health sciences librarian serving the information needs of the library clientele, most especially in this setting as the member of the NCCU clinical team responsible for making sure that the information provided to the entire clinical team is based on authoritative resources, it is imperative that the clinical librarian performs the duty of literature searching with utmost care and planning.

Constructing the search strategy is a carefully-planned activity done by the clinical librarian. After receiving the search query, the clinical librarian identified elements from the query which could be used as search terms. Relevant terms using natural language and a controlled vocabulary (i.e. Medical Subject Headings [MeSH]) were also selected and included in the search string. Terms which should be included or excluded in the search were discussed and agreed upon by both the clinical librarian and the NCCU clinical team member. Limits for the search string (e.g., publication type, date

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of publication, language) were applied as appropriate. Completing the search string is the use of Boolean operators (i.e., AND, OR, NOT), exact phrase searching (i.e., use of quotation marks to enclose terms to be searched as is), and nesting (i.e., use of parentheses to enclose relevant terms and appropriate Boolean operator). Modification of the search strategy is done, as necessary.

Selecting and critically appraising the most appropriate resource/s among the myriad of information resources retrieved as a result of the literature search is an important step done by the clinical librarian before he provides the relevant articles/resources to the NCCU clinical team. Critical appraisal were done for articles on diagnosis, prognosis, randomized controlled trials, qualitative studies, and systematic reviews using applicable checklists such as those provided by the University of Oxford Centre for Evidence-Based Medicine. In cases wherein there are still many relevant articles retrieved after filtering the irrelevant resources and selecting through critical appraisal, only the most recent publications were included in the resources given to the clinical team (e.g., published within the last 5 years, or last 10 years).

Cases Encountered by the Clinical Librarian

Numerous cases have been encountered by the clinical librarian during his tour of duty in the NCCU—from the typical ischemic stroke to rare neurological diseases. Below are some examples of cases in which the clinical librarian assisted through mediated literature search.

Prevention of Intravenous Catheter-Related Infections

The incidence of infection in patients admitted in intensive care units, such as the NCCU, is common (Vincent et al., 2009). One of the causes of such incidence of infection is a catheter inserted to the patient. During multidisciplinary rounds, the neurointensivist directed the entire clinical team to minimize the occurrence of catheter-related infections amongst NCCU patients. To help reduce the incidence of catheter-related infections in the NCCU, the clinical librarian performed mediated literature search on the topic. Various databases were used in the search, such as PubMed/MEDLINE, ClinicalKey, UpToDate, and the U.S. National Guideline Clearinghouse (NGC). The searched yielded a variety of resources, such as case reports, clinical trials, narrative reviews, and practice guidelines. Said resources were then categorized according to its level of evidence, used in the practice of evidence-based medicine. Ultimately, the clinical librarian selected the latest practice guideline by the U.S. Centers for Disease Control and Prevention, and provided it to the head nurse of the NCCU, to be used as one of the guides of the nurses in the unit.

Brain Infection caused by the Dengue Virus

A patient with dengue fever was admitted in the NCCU due to encephalitis associated with the dengue virus. Such brain infection caused by the dengue virus is considered as a rare complication of dengue fever (Baheti, Mehta, Ramchandani, & Ghosh, 2018). While the case was being discussed during multidisciplinary rounds, the neurointensivist asked the clinical librarian to search for any available evidence to support their plan of care for the patient. Being a rare type of disease involving

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the dengue virus, the clinical librarian limited his search on the topic using PubMed/MEDLINE, since the said database can filter a search to be limited only for case reports, case series, and review articles, if available. In addition, HERDIN (Health Research and Development Research Network) was used to locate any relevant resource published in the Philippines. After a comprehensive literature search, the clinical librarian was able to retrieve a number of case reports and a handful of review articles, which detail appropriate methods for diagnosing and treating dengue virus-associated encephalitis. The articles were then provided to the neurointensivist and the other members of the clinical team after the multidisciplinary rounds.

Seizures secondary to an Antibiotic

A patient admitted in the NCCU is to be prescribed by a carbapenem antibiotic. This type of antibiotic is used to treat various types of infections, which includes meningitis. However, there is a risk for seizures secondary to antibiotics (Miller et al., 2011). Thus, the clinical librarian searched for literature on antibiotic-associated seizures. Since the topic involves a serious complication of a medication, drug databases such as Lexicomp were included in the resources usually searched by the clinical librarian for literature (i.e., PubMed/MEDLINE, ClinicalKey, UpToDate, NGC). The result of the search yielded case reports, case series, and review articles—all of which showed that indeed, there is a potential risk for seizure occurrence in patients with a history of seizure who are to be administered with carbapenem antibiotics. The selected articles were then presented to the neurointensivist and the neurocritical care fellow, for their reference.

Participation in Research Activities and Projects

Apart from providing information resources to support clinical care for currently admitted patients in the NCCU, the clinical librarian assisted in various research activities and projects of the physicians and nurses of the unit. Such projects include: 1) the development of an innovative intervention to prevent the incidence of pressure ulcers in NCCU patients; 2) formulation of clinical pathways for large hemispheric infarction, intracranial hemorrhage, and subarachnoid hemorrhage; 3) implementation of "quiet time" in the NCCU; 4) research on the potentials of music therapy for patients with acute brain injuries, and 5) development of the adult neurocritical care databank. Mostly, the clinical librarian assists in such researches and projects by doing mediated literature searches for the research/project proponents.

To encourage all members of the NCCU staff to do research, the neurointensivist assigned the clinical librarian to identify recommended research topics/areas in the field of neurocritical care. Search results gathered by the clinical librarian were then used in the formulation of the neurocritical care research agenda for the NCCU. The draft of the research agenda was created by the clinical librarian, with the research agenda getting approval by the neurointensivist after further review and consultations.

Support for Continuing Education and Adult Neurology Residency Training

Weekly lectures on managing patients with neurological disorders are given by neurology

residents, medical interns and clerks rotating in the NCCU for the month, as part of their training program. Being a member of the clinical team, the clinical librarian also attended the lectures along with the rest of the NCCU staff, to further his knowledge on neurological disorders. Sometimes, the neurointensivist gave the clinical librarian an opportunity to share his knowledge with the entire NCCU staff on information search and retrieval, as a topic for the weekly lectures. Thus, the clinical librarian gave lectures on search strategies for PubMed and other electronic databases, and on principles and concepts of Medical Subject Headings (Santos & Mariano, 2014).

In addition to the aforementioned lecture activities, online lectures and seminars on or related to neurocritical care are provided to the NCCU staff. To support its delivery, the clinical librarian assists on identifying open-access or free seminars in the Web. The neurointensivist selects and approves the identified topics, and the clinical librarian assists in the preparation of the required equipment for the online seminar.

From 2016 to 2018, the neurointensivist was appointed as training officer of the adult neurology residency training program of the Institute of Neurosciences of St. Luke's Medical Center-Quezon City. The training officer of a residency training program primarily manages and implements the residency training program of a teaching hospital, in accordance with the curriculum prescribed by its respective specialty board. With this appointment, the clinical librarian was assigned to assist in the implementation and improvement of the adult neurology residency training program, through identification of relevant information resources to be used in creating content for scheduled lectures and in formulating questions for the monthly written examinations.

Contributions for Institutional Accreditation

The clinical librarian had an opportunity to contribute in the improvement of the NCCU and the Institute for Neurosciences. It was during the preparation for clinical care program certification for primary stroke program of the Joint Commission International in 2014 and 2017 when the clinical librarian had that opportunity. The neurointensivist assigned the clinical librarian to search for pertinent standards, policies, and guidelines from other hospitals around the world, which could be used as references by the ad-hoc committees responsible for accreditation in developing and improving those of the medical center.

Conclusion

Like any other new or innovate library service, establishing a clinical librarian service involves a lot of considerations, especially in the Philippines. One of which is the qualification of the clinical librarian. As experienced and determined by the clinical librarian, and mentioned by other clinical librarians in other studies, the following are the core skills one has to learn to effectively assume the role: (1) advanced literature searching (Burdich, 2004; Harrison & Sargeant, 2004; Harrison & Beraquet, 2009; Gorring et al., 2010; Ward, 2010); (2) critical appraisal (Ward, 2010); (3) in-depth knowledge of clinical/medical terminologies (Burdich, 2004; Harrison & Sargeant, 2004; Ward, 2010);

and (4) knowledge of the health care environment (Burdich, 2004). Although having a degree in the health sciences (e.g., medicine, nursing, pharmacy) is an advantage, it is not a necessary requirement; acquisition of the aforementioned skills by the prospective clinical librarian, through formal or informal means, would suffice. Thus, it is recommended that library schools, professional library associations, and other entities involved in the education and training of librarians to establish courses or training programs on developing the core skills a clinical librarian require.

Funding the clinical librarian service is one of the crucial considerations, which may determine the success or failure of the service. It is one of the reasons why many clinical librarian services have failed in the past (McShea, 2006). The NCCU clinical librarian service has been ongoing up to this day, because there is constant availability of funds to maintain the service. Thus, establishing a clinical librarian service requires that funding should be secured.

Another consideration is the staffing model of the clinical librarian service. In the case of the clinical librarian of the NCCU, the clinical librarian is directly under the supervision of the neurointensivist, who is the head of the unit as well. Librarians in hospital libraries who wish to establish a clinical librarian service may undergo clinical librarian training, and coordinate with the departments in their respective institutions who would want to acquire the services of their clinical librarian program. Hospitals which does not maintain a hospital library, but are interested in hiring clinical librarians, may place the clinical librarians under the supervision of their respective departments, or establish a distinct department/service of all clinical librarians.

Lastly, when proposing a clinical librarian service for an institution, the proponent of the project should identify a "champion"/advocate—one who understands the concept, importance, and benefits of having a clinical librarian as part of a clinical team (McShea, 2006; Sulimanoff et al., 2011). In the case of the NCCU clinical librarian service, the "champion" is the neurointensivist, who also actively promoted the services of the clinical librarian amongst the staff members of the NCCU, and has advocated the importance of the clinical librarian in ensuring that the NCCU clinical team is guided by evidence in the provision of quality care for its patients.

The clinical librarian model provides an opportunity for health sciences librarians to collaborate with other health care professionals in providing quality patient care. As demonstrated by the clinical librarian program in the NCCU, the services provided by the clinical librarian contribute to ensuring that the clinical team is guided by the latest available evidence. Also, the clinical librarian model can contribute in enhancing the image of a health sciences librarian amongst health care professionals— that they are more than just information providers confined in the walls of the health sciences library. Clinical librarians could be indispensable partners in the provision of quality patient care in their respective institutions, especially in the Philippines.

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