

PATIENT FAMILY AND HOSPITAL STAFF INFORMATION NEEDS AT A PEDIATRIC HOSPITAL:
AN ANALYSIS OF INFORMATION REQUESTS RECEIVED BY THE FAMILY RESOURCE LIBRARIES

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This research explored the information needs of patient families and hospital staff at a pediatric hospital system in Dallas, Texas. Library statistics recorded in four hospital libraries from 2011 - 2013 were used to analyze the information requests from patient families and hospital staff. Crosstabulations revealed the extent to which patient families and hospital staff used the libraries to satisfy their information needs. The data showed that patient families used the libraries very differently than hospital staff. Chi-square tests for independence were performed to identify the relationships between the Classification (Patient Family, Hospital Staff) and two descriptors of information needs (Request Type, Resources Used). There were a total of 1,406 information requests analyzed. The data showed that patient families and hospital staff information requests differed greatly in the number of information requests, the type of information requested, the resources used and the time the library staff spent on the requests. Chi-square analyses revealed relationships statistically significant at the $p < .05$ level; however, the strength of the relationships varied.

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CHAPTER 1

INTRODUCTION TO STUDY

Having a child hospitalized, no matter the length of the hospitalization, can be a very trying time for any family. Those whose children are regularly in and out of hospitals due to chronic illnesses have come to know what to bring and what to expect during their hospital stay. But there are others who have arrived via ambulance or helicopter and were in such a rush they did not grab even their driver's license before they left. Parents are often exhausted from multiple nights of little or no sleep, stuck in a hospital room most of the day for fear of missing the doctor if they leave the room, living out of a hastily packed bag or even simply the small necessities a close friend picked up for them at Wal-Mart. Through it all, the parents are constantly worrying about their child. Some may keep busy by making the room as much like home as possible, decorating the walls with pictures of family and friends, obtaining books and toys for the child's comfort and distraction, and staying in constant contact with family and friends via email, phone calls, and social media. Still, there is no escaping the fact that the child is sick or hurt and the parent is worried.

Many hospitals consider Patient Family-Centered Care (PFCC), in which the patient and family take an active role in treatment, the standard of pediatric health care (Kuo et al., 2012). The core concepts of PFCC are information sharing, respect and honoring differences, partnership and collaboration, negotiation, and care in context of family and communities (Abraham & Moretz, 2012; Kuo et al., 2012). More specifically, it includes "parental role negotiation, effective communication among the health care team and parents, parental decision-making processes, and continual parental presence" (Uhl, Fisher, Docherty, &

Brandon, 2013). In addition to the general stress and discomfort of staying in the hospital, the PFCC philosophy encourages the parent to learn about their child's condition, weigh treatment options and make critical decisions. However, there is always the possibility that the parents may not have enough information to make an informed decision or simply not know where to look for information, thus increasing their stress and anxiety.

For example, a child was born premature and stayed in the Neonatal Intensive Care Unit (NICU) for the first several months of his life. When the baby was 2 days old he was diagnosed with patent ductus arteriosis (PDA). In full term infants the ductus arteriosis closes shortly after birth so that the baby can breathe properly outside the womb. In PDA, the ductus arteriosis does not close, often resulting in the lungs filling with fluid. There were two options: heart surgery, which can be risky on such a premature baby, or a medication which would constrict the heart valve to close but it is not guaranteed to work. If the medication does not work, surgery is necessary. Although not uncommon among premature babies, PDA is life threatening. The parents had only 8 hours to make a decision. Because the mother worked in a pediatric hospital, she knew where to go for information. She did her research quickly and they ultimately decided to go forward with the surgery.

Later that day, the mother met a couple whose child was in the same unit. Their premature baby girl also had PDA and they too were faced with a quick decision between surgery and medication. They chose the medication, which caused necrosis of the bowel, which required surgery to fix the bowel and then the child had to have the heart surgery to correct the PDA. Through her tears, the mother of the baby girl spoke of how stressful and difficult it was to make that decision without the time to do thorough research, or any research at all.

They had not known where to look for information, so they had followed their doctor's suggestion without knowing possible side effects of the medication. When making any decision about your child's care, especially one that would impact the child for the rest of his/her life, it can be extremely stressful to not have the right resources on hand and to blindly follow a doctor's suggestion.

With the change from the traditional provider-centered focus to patient- and family-centered care, healthcare organizations want to understand the needs of their patients and families (Abraham & Moretz, 2012). Libraries built specifically for the hospital patients and families can act as go-to resource for families that need information and need it quickly. By understanding exactly what information is requested, the libraries can provide reliable information in a very timely and efficient manner. In that way, hospital libraries play a great role in supporting PFCC.

While libraries support patient families and PFCC, they also support hospital staff in their information needs. Information is requested by hospital staff for a variety of purposes, including presentations, publications, and personal reasons. Sometimes staff request information on behalf of a patient family or simply to stay abreast of the literature in their field. Often, information is requested to establish or update policies and procedures for their department. This falls under evidence-based practice (EBP).

Succinctly defined, EBP is "the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients" (Sackett, Rosenberg, Gray, Haynes & Richardson, 1996, p. 71). The libraries at the Children's Medical Center (CMC) support EBP by providing research for staff on a general topic, best practices for a particular procedure,

most recent published guidelines on a certain practice, or simply the full text of specific articles. EBP is just one reason, yet an increasingly common reason, staff seek information from the libraries at CMC.

The Family Resource Libraries at Children's Medical Center

The libraries at CMC exist because a young patient named Krissi Holman wanted to read a book one night. Krissi was diagnosed with cancer when she was barely out of elementary school and fought courageously for seven years. During one of her stays at CMC, she was unable to sleep and wanted to read a book but she had left her books at home and did not have anything to read. The next morning, Krissi told her parents that the hospital should build a library for its patients and fill it with books for patients to check out and take to their rooms. It should provide a relaxing and welcoming environment that would act as an escape from the hospital rooms, the sterile white walls, and the beeping medical equipment. Krissi wanted a library that would embrace the patients, provide wonderful stories they could lose themselves in and help them forget about their pain, if only for a moment.

At that time, CMC was planning a consumer health library where families could access reliable health and medical information; yet, they had not considered including leisure books. Krissi's idea for a children's collection added an entirely new dimension to their original library plans and they loved it.

The Holman family immediately went to work. They rallied their family, friends, church and community, donating thousands of books and hundreds of thousands of dollars. Krissi was in the middle of it all. She worked with a family friend to design bookplates to put in each book.

She selected the bookshelves and beanbag chairs. Another family friend hand-painted a mural over the arched doorway in the library with ladybugs and butterflies playing on green vines around the words "Krissi's Children's Collection."

Spring 2004 saw Krissi's senior year of high school coming to an end. She was scheduled to graduate that May and the library was planning a grand opening and dedication that winter. Unfortunately, Krissi's cancer had other plans. She was too sick to attend high school graduation, so the graduation came to her. She had a bedside graduation ceremony at home with family and friends filling the room. A few weeks later, Krissi died peacefully at home with her family surrounding her.

On January 6, 2005 the Krissi Holman Family Resource Library held its grand opening ceremony with the Holman family cutting the ribbon. The 420 square foot library was filled with light wood bookcases, more than 2,000 books, three computers, and one professional librarian. Located on the seventh floor of the main hospital, the library boasts gorgeous floor-to-ceiling windows facing west, providing a spectacular view of sunsets, storms, and a flat Texas landscape. In the years since, the library system at CMC has exploded.

In 2007, a second library opened in the Pavilion Ambulatory Care Building. Built to serve the outpatients visiting the clinics, the Pavilion Library quickly became the busiest of the libraries. In 2012, the Pavilion Library alone saw over 24,000 visitors. On November 27, 2013 it was renamed in memory of Judith "Judy" Kaplan-Einstein. Judy was the Director of the Libraries as well as one of the committee members who helped create Krissi's library. She served CMC and its patients for 18 years, losing her fight against cancer in April 2013.

In 2008, the Karahan Family Resource Library opened at the Legacy campus in Plano. Located in the main lobby of the 24-bed hospital, this library is small but provides exactly what the inpatients and outpatients at the Legacy need: books, computers and a friendly librarian. A majority of its visitors are reached through the Book Mobile, a cart of books the librarians and the library volunteers take throughout the entire Plano campus.

In 2009, the Tower D Library was opened. Located on the lobby level of the main hospital in Dallas, this new library was the largest at 2,000 square feet. The library also held a large storage room and the director, Judy's, office in the back. While the Tower D Library was open, it and the Holman Library would be open at different times. The regular Monday – Friday hours varied according to staffing levels, but when the libraries were fully staffed the hours for the Tower D and Holman Libraries were as follows. The Holman Library was open 9am – 11am and then 4pm – 7pm. On Fridays, it was not open from 4pm-7pm. The Tower D Library was open 11am – 4pm, Monday – Friday.

In 2010, a Reading Room was opened at the Southlake Specialty Care Center in Southlake, Texas. A small room with two computers, leisure books and health brochures, this room is not staffed with a librarian and thus is known as a reading room and not a library. The concierge desk ensures the space is neat and clean and the librarian from the Karahan Library in Plano visits and restocks it once a month.

At this point, there were four professional librarians (librarians with Master's degrees in Library Science), one in each of the libraries at CMC. With four libraries and a reading room opened, the librarians planned to use 2012 as a year to settle in and focus on expanding services, resources and outreach efforts. But that did not happen.

In May 2012, hospital administration told Judy that she had one month to pack up and move out of the Tower D Library as well as the storage room and her office, both located in the back of the library. The entire space was to going to be transformed into a radio and TV studio.

On June 19, 2012 the Tower D Library closed its doors. Books, computers, desks, furniture, bookcases and plants were moved into a storage facility off campus. The Krissi Holman Library was expanded from 420 square feet to 920 square feet. The expansion was completed in October 2012 and the Holman Library hours were Monday – Thursday, 9am – 7pm, Friday 9am – 4pm.

As of 2014, CMC has four librarians, three libraries and one reading room. Two librarians are in the Krissi Holman library, while one is in the Judy Einstein Library and another is in the Karahan Library. All libraries are open Monday – Friday. Only the Krissi Holman Library has weekend volunteers that open the library for a few hours on Saturdays and Sundays. As of this study, the Monday – Friday regular hours of the libraries are: The Krissi Holman Library is open from 9am – 7pm, the Einstein Library is open from 7am – 6pm, which are the hours of the Pavilion Ambulatory building, and the Karahan Library's doors are open 8:30am – 7pm.

Although patients and patient families have access to libraries during their hospital stay, the hospital staff at CMC has no library space available for their use. The Krissi Holman Library – and thus the other libraries established thereafter – view the patients and families as its primary priority. Not wanting family to walk into a room full of white coats, hospital staff was discouraged from using the physical library except for checking out books on behalf of their patients. Still, they were able to request research via email and in later years were permitted to come in and check out books for their own use.

In 2012, CMC released a strategic plan for the next 25 years. One of the seven goals is “to create a stronger academic environment” through increased staff research (Children’s Medical Center, 2012). A CMC librarian was instantly curious: How does a hospital that strives to become a cornerstone of pediatric medical research not provide a library space for use by staff? How can the libraries support the research needs of staff? And what exactly are those needs? How can the Family Resource Libraries continue to support the patients and families (and thus contribute to PFCC) while assisting staff with their research needs (and thus help the organization achieve one of their strategic goals)?

In September 2014, CMC officially changed its name to Children’s Health System of Texas. For the purposes of this study, it is referred to as Children’s Medical Center (CMC).

1.1 Problem Statement

At the present time, there is no clear evidence of how the libraries support the information needs of patient families and hospital staff at a pediatric hospital. There is no understanding of the information needs of patient families and hospital staff; there is no understanding of how the libraries meet their information needs. The librarians keep detailed statistics of library usage but have never analyzed the data to understand the library users’ information needs or library usage. Therefore, librarians must investigate further. They can use the library statistics to better understand library usage as well as the information needs of the library users.

1.2 Purpose

The purpose of this research is to understand how the libraries assist patient families and hospital staff in locating information in a pediatric hospital. The libraries at CMC provide PFCC each time they assist patient families in locating information. The libraries help create a stronger academic environment each time they provide research and information to hospital staff.

1.3 Definitions

Listed here are the most appropriate definitions of the terms for this study.

1.3.1 Evidence-Based Practice

One of the most widely accepted definitions of evidence-based medicine (EBM) is from Sackett, Rosenberg, Gray, Haynes, and Richardson (1996): "...the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. The practice of evidence based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research" (p.71). This definition is often applied to the more general practice of evidence-based practice (EBP).

It is important to clarify the difference between EBM and EBP. EBP is based on the "ideology and technique behind EBM" (Hjorland, 2011, p. 1301). Though EBM is said to have originated earlier, EBP is the more general term, encompassing EBM as well as other evidence-based fields, such as evidence-based surgery, evidence-based nursing (EBN), and evidence-based librarianship (Hjorland, 2011). The term "evidence-based" is not restricted to the medical

field; it can be applied to a wide variety of fields of study. Therefore, EBP is considered the more all-encompassing term, while EBM limits it to the practice of medicine.

Because the data used in this study will be pulled exclusively from libraries in one hospital system and thus primarily medical or clinical settings, the terms EBP, EBM and EBN may all be used. EBP will be the default term. When instances call for a specification, EBM or EBN will be used appropriately.

1.3.2. Family Resource Libraries

The formal name of the libraries at CMC that serve both patient families and hospital staff.

1.3.3 Hospital Staff

The term “hospital staff” refers to all persons employed by the hospital. This includes, but is not limited to: doctors, nurses, respiratory therapists, medical librarians, hospital teachers, clinical educators, child life specialists, social workers, pastoral care, managers, team leaders, nursing students and administrative staff. Hospital volunteers are also included in this category, as they represent the hospital while interacting with patients and patient families.

1.3.4 Information

For the purpose of this study, Donald Case’s (2012) definition of information is most appropriate: “...any difference you perceive, in your environment or within yourself” (p. 4).

Though this research is done in a hospital setting, “information” is not limited to health-related

topics. Patient families may need a variety of information while their children are hospitalized; therefore, “information” is left in its more general form.

1.3.5 Information Need

The need for information is best described as “...a recognition that your knowledge is inadequate to satisfy a goal that you have” (Case, 2012, p. 5). In the hospital setting an “information need” may vary significantly. It can range from needing information on medications or surgery to directions to the closest grocery store, from where to borrow movies to watch in the room, to how to explain a diagnosis to a child.

1.3.6 Nurse

For the purposes of this study, the term “nurse” includes all levels of the nursing profession, such as Registered Nurse, Advanced Practice Nurse, Nurse Practitioner, Clinical Nurse Specialist, Clinical Nurse Educator, Pediatric Nurse Practitioner, Family Nurse Practitioner, Chief Nursing Officer, and Associate Chief Nursing Officer. When possible, these job titles are specified in the data analyses and discussion.

1.3.7 Patient Family

The term “patient family” refers to all family members of the patient (e.g. parents, grandparents, siblings, aunts, uncles, cousins, and non-family caregivers).

1.3.8 Request Type

For the purposes of this study, the four categories of requests include:

- Medical Information: Information on medical conditions, diseases, procedures, injury, or illness. This includes but is not limited to cancer, epilepsy, heart surgery, human anatomy, or traumatic brain injury.
- Health and Wellness Information: Information on the prevention of illness and injury or the promotion of health and wellness. This includes but is not limited to cholesterol, blood pressure, smoking cessation, nutrition, or exercise.
- Clinical Information: Information that involves more in-depth clinical focus on diseases, conditions, or procedures. This includes but is not limited to best practices, guidelines, or policies and procedures.
- Non-Health Related information: Information that does not involve health or medical information. Includes requests for assistance with homework, yoga resources, hotel information or driving directions.

1.3.9 Resources Used

For the purposes of this study, the six categories of resources include:

- Books: health or medical books that belong to the Family Resource Libraries.
- Brochures: Includes booklets, brochures, pamphlets that are free to patients, patient families, and hospital staff.
- Internet: The use of resources on the Internet accessed from the computers within the Family Resource Libraries.

- Subscription Databases: Databases that the Family Resource Libraries hold paid subscriptions. These include: EbscoHost, Medline, CINAHL, and Nursing Reference Center.
- UT Southwestern Library: Use of the resources belonging to the UT Southwestern Library. These include their books, journals, and subscription databases.
- Other: Any resources not belonging to the Family Resource Libraries or to the UT Southwestern Library. This may include but is not limited to accessing the resources at Dallas Public Library or calling another hospital department.

1.3.10 School Issues

A topic of information requests that involves the creation of guidelines for schools to reference when working with students with serious injury or chronic illness. These guidelines are created by the teachers at CMC and sent to the schools to increase awareness of the students' needs and help the school properly care for and support the student upon their return to school. The guidelines address any emotional, physical, social, medical, and mental changes or difficulties children of school age may experience after a severe injury or a diagnosis of chronic illness.

1.3.11 Stronger Academic Environment

A hospital-wide initiative that aims to increase the research efforts, publications, and contributions of hospital staff to the medical field.

1.4 Research Questions

1. To what extent have patient families used the Family Resource Libraries to meet their information needs?

2. To what extent have hospital staff used the Family Resource Libraries to meet their information needs?

3. What is the relationship between Classification (Patient Family, Hospital Staff) and two descriptors of information needs (Request Type, Resources Used)?

A. What is the relationship between Classification (Patient Family, Hospital Staff) and two descriptors of information needs (Request Type, Resources Used) as requested in the Holman Library?

B. What is the relationship between Classification (Patient Family, Hospital Staff) and two descriptors of information needs (Request Type, Resources Used) as requested in the Tower D Library?

C. What is the relationship between Classification (Patient Family, Hospital Staff) and two descriptors of information needs (Request Type, Resources Used) as requested in the Einstein Library?

D. What is the relationship between Classification (Patient Family, Hospital Staff) and two descriptors of information needs (Request Type, Resources Used) as requested in the Karahan Library?

1.5 Significance of the Study

Four primary points of significance are identified for this research. This is the first in-depth analysis of patient family usage of the Family Resource Libraries at CMC. By analyzing the information requested by patient families, the librarians can provide solid justification for expanding their informational materials on specific topics. Additionally, the librarians can reach out to those hospital departments and help them provide sufficient resources for their patients and families at the bedside.

This is also the first in-depth analysis of staff usage of the Family Resource Libraries at CMC. This particular library system is built for the patients and families. There is no library available for hospital staff in this pediatric hospital. By closely examining what information is requested by staff, the libraries can reach out to and collaborate with other research-oriented departments within the organization to share resources and services in order to better meet staff research needs. Also, this study can help illustrate the need and the justification to expand the library resources and services specifically to improve services for staff.

This study can provide a foundation on which to base additional research on the recording and analysis of library usage statistics. Such research may include the best practices of library statistics as well as the interpretation of library statistics. Much information can be obtained from analyzing library statistics, yet there is little literature about it.

The research presented here will also contribute a body of knowledge to the literature of hospital librarianship and, more specifically, pediatric hospital librarianship. It is the first to

investigate the information needs of patient families and hospital staff in a pediatric hospital as shown through the library statistics on information requests.

1.6 Assumptions

For the purposes of this study, there are four assumptions. First, it is assumed that patient families have information needs and come to the Family Resource Libraries to fulfill those information needs. Second, it is assumed that hospital staff have information needs and come to the Family Resource Libraries to fulfill those information needs. Third, it is assumed the information used in the analysis was recorded to the best of the abilities of the library staff. Fourth, it is assumed that the information was recorded accurately.

1.7 Limitations

The data used in this study is statistics recorded by the librarians at CMC from January 2011 – December 2013. Although the numbers and information requests cannot be generalized to other hospital libraries, it is the researcher's hope that this study can act as a guide for other librarians.

The methodology is also a limitation of this study. By analyzing only the number of information requests received, the data is somewhat one-sided. There is no qualitative data – interviews, surveys, or questionnaires – to provide a more complete picture of the information need. The data collected and analyzed here only address what information was requested, who requested it (patient family or hospital staff), and when it was requested. There is no demographic data, how they learned about the libraries, what other library services they use or

how often they visit the libraries. The data collection and analysis is discussed at greater length in Chapter 3; however it should be noted here that the lack of qualitative data is a recognized limitation.

Another limitation regarding the data collection is the fact that this data was not collected solely for the purposes of this research. Therefore, the librarians were neither formally trained nor strictly monitored in recording the information requests. Thus there are missing data throughout all fields; each case of missing data was coded as “0” for “not recorded.” In regards to the Reason for Request variable, one reason listed for hospital staff information requests is EBP. Unfortunately, it is not possible to breakdown this category further due to the data collection methods.

Additionally, there is no hospital-wide data available, such as total patient census. The trends over the course of a year or a number of years cannot be related to the number of patients in the hospital or any disease outbreak. Therefore, this study is unable to relate the number of information requests to any hospital-wide event or level of occupancy.

1.8 Summary

This research design provides a thorough analysis of the information requests statistics recorded in the libraries at CMC. Through the research questions, and with the limitations in mind, this study presents an understanding of the information needs of patient families and hospital staff in a pediatric hospital. It also sets the foundation for more extensive research on information needs and the contribution of library usage statistics to understanding their information needs.

CHAPTER 2

LITERATURE REVIEW

This chapter will present a literature review on hospital libraries for patients, information and emotion of pediatric patient families, EBP, and the information needs of hospital staff. Reviewing the current literature on these topics builds a theoretical framework for this study on patient family and hospital staff information needs within a pediatric hospital.

2.1 A Brief History of Hospital Libraries for Patients

Libraries in hospitals have a varied past: there is the medical library that evolved with the organization of medical schools and there is the hospital library built for the patients. Five major periods of development have been recognized within medical libraries: 1. Colonial America through the 19th century; 2. World War I through the Great Depression; 3. World War II through the 1950s; 4. the 1960s and the Great Society and the Medical Library Assistance Act; and 5. the 1970s (Wolfgram, 1985). Those five periods also saw great change in hospital libraries built for the healing, education and comfort of patients and so the time periods are outlined here in relation to the development of libraries for patients. The changes in libraries, resources and information access continued to occur past the 1970s. This timeline has been expanded to include the 1980s, 1990s and 2000s.

2.1.1 Colonial America through the 19th Century

In the late eighteenth-century, an English Quaker named William Tuke had the idea that mental asylums should not be a type of confinement for the patient; it should act as a

treatment center, a retreat (Dunkel, 1983). Less than a century later, such concepts were being established in the mental institutions of the United States, found mainly in the New England states. Psychologists and physicians were discovering that to truly heal a person, both the mind and the body should be treated (Dunkel, 1983). The body was treated with medicines and surgeries, while the mind was treated with books. As John Minson Galt stated in his essay “On Reading, Recreation and Amusement for the Insane”:

Reading ... is employed as a moral means in the treatment of insanity. We adopt it as a measure which serves to occupy the mind to the effacement of delusions and morbid feelings, at least for a transitory period; it is, in other words, one of the greatest revulsive modes of acting upon the insane mind. Moreover, it serves as a pleasant method of passing away time, and in this respect exerts a tranquilizing effect on the individual (as quoted in Dunkel, 1983, p. 275).

This concept came to be known as “bibliotherapy” (Dunkel, 1983; Perryman, 2006).

While Galt was the first in the United States to publish on the topic of bibliotherapy, it is argued that the concept can be traced to 1276 A.D., where a hospital in Cairo, Egypt allowed priests to read the Koran twenty-four hours a day to the patients who would listen (Panella, 1996).

In 1802, Dr. Benjamin Rush suggested a small library should be established in each mental hospital so that patients will not only have entertainment but could also advance their education in philosophy, morals and religion (Perryman, 2006). In 1844, the first hospital library for patients opened in Massachusetts General Hospital, which gave religious and moral readings to patients upon their discharge from the hospital (Perryman, 2006). It was not until 1880 that the hospital library began loaning books to the patients during their stay.

Galt published a number of books on the moral treatment of the mentally ill, always recommending library services, often listing specific titles that the patients should read (Perryman, 2006). In the beginning, there were no mention of librarians and often assistant physicians would keep the library in order, taking note of patients' reading activities; in some cases the patients themselves were assigned to work in the library (Dunkel, 1983; Perryman, 2006). In 1904, a private mental institution in Massachusetts, McLean Hospital, was one of the earliest known hospitals to develop a patient library staffed by a trained librarian (Wolfgram, 1985).

2.1.2 World War I through the Great Depression

Patient libraries owe their existence not only to mental institutions but also to war. In 1917, the American Library Association (ALA) began sending books to soldiers around the world (Panella, 1996; Perryman, 2006). In 1918, the U. S. government gave ALA permission to establish patient libraries in military hospitals (Panella, 1996; Wolfgram, 1985). One year later, ALA had 145 librarians and six supervisors employed in the War Hospital Service, with 121 patient libraries in France alone and had already served soldiers at a total of 3,981 military service points (Panella, 1996; Perryman, 2006; Wolfgram, 1985). This service was so well received that librarians, supported by medical professionals, worked to establish bibliotherapy as a true medical therapy (Perryman, 2006).

At the end of the war, ALA turned over its libraries to the army and navy but continued working with Public Health Service (PHS) hospitals for disabled soldiers (Panella, 1996). When funding ran short and ALA had to stop their work, there was such great protest by soldiers,

officers, patients and nurses over the possible loss of their libraries, that the Red Cross financed the librarians' salaries until ALA financially recovered (Panella, 1996). In recounting the librarians of the war service, one author wrote:

Hospital librarians had an abiding faith in the curative power of controlled reading. That faith in reading as a therapeutic agent gained many converts during and after the war. Bibliotherapy came of age during World War I, a direct consequence of the Association's library service to hospitals (as quoted in Panella, 1996, p. 56).

At that same time, epidemics of yellow fever, influenza and tuberculosis were causing the public to demand for greater public health education. Thus, the Committee of One Hundred on National Health was formed with the sole purpose to "control preventable illness" (Perryman, 2006, p. 266). This committee made recommendations for school health programs, childcare, and preventative health. One of their more noteworthy suggestions to the federal government was the dissemination of information to the general public just as information was provided to farmers on conservation, commenting that this should "lay to rest claims that animals were better cared for than humans" (Perryman, 2006, p. 266).

These early years of the 1900s began a period in which there was a great boost in hospital libraries and librarians. The war service librarians advocated for hospital libraries, while the public demanded more health information and resources (Perryman, 2006). The librarian at Massachusetts General Hospital published four criteria for successful hospital libraries: 1. An organized central library, 2. A librarian with personality, knowledge of books, 3. An annual budget sufficient for the purchase of new books as they are published and 4. The exclusion of morbid, gruesome and unwholesome literature (Perryman, 2006).

In the 1930s, hospital associations were developed and medical standards were set; by 1936 both the American Hospital Association and the American College of Surgeons were expressing recognition of the importance of libraries in hospitals (Wolfgram, 1985). It was not until 1937 that a formal education class was offered in medical librarianship at the University of Minnesota (Wolfgram, 1985). The decade between WWI and the Great Depression was a period of growth for the medical profession; once the Great Depression hit, prosperity was halted until the mobilization of WWII (Wolfgram, 1985).

Also at that time, the science of bibliotherapy was brought into question. Because the effects of reading could not be recorded as hard data, librarians fought to justify it by other means: Ruth Tews, head of the library services for St. Paul, Minnesota public library published a study in which the reading habits of patients, along with their comments and behavior changes, were observed by the library at a local hospital (Panella, 1996). Another librarian, Perri Jones, wrote, "...There is a growing, conscious, positive realization that the courage, the sanity, the self-forgetfulness, the power of the will, the sublime goodness that comes to life through words, black scratches on white paper, is a reservoir we have not tapped as we might" (as quoted in Panella, 1996, p. 57). By 1945, there was such a vast amount of writings regarding bibliotherapy, that the *Bulletin of the Medical Library Association* published a "Bibliography on Bibliotherapy and Hospital Libraries" (Panella, 1996, p. 57).

2.1.3 World War II through the 1950s

With World War II came the idea that the practice of medicine does not lie solely in biology – that education, research, and technology can also lend a hand. Therefore, the

greatest advancements in medicine are found where these worlds collide: at the hospital (Wolfgram, 1985). An increased interest in medicine and medical research led to more advancements which led to many more publications; it was up to the libraries to organize it all (Wolfgram, 1985). In 1952, the Joint Commission on Accreditation of Hospitals was formed and the next year it published its first standards for hospitals, which required hospitals to have a medical library (Wolfgram, 1985).

Beginning in the early 1940s, many library associations began publishing standards for hospital libraries – both medical and patient – as well as standards for the education for the new concept of “hospital librarianship.” The American Library Association (ALA) published the first standards for patient libraries in 1944 and 1948; these outlined specific levels of service to which patient libraries and librarians were to aspire (Panella, 1996). The 1948 standards were revisions of the 1944 standards, updated with the help of the Special Library Association’s (SLA) Hospital Libraries Division. It was not until the 1953 publication, *Hospital Libraries, Objectives, and Standards* that different standards were set for patient libraries, medical libraries and libraries for nursing schools (Panella, 1996).

In 1955, librarians actively began discussing and publishing ideas that would form consumer health services (Perryman, 2006). Previously, patient libraries had largely provided leisure reading materials that would support bibliotherapy. This was primarily due to the fact that the medical profession did not recognize the need for patient education until public health reforms, and that physicians were very protective about what their patients were told (Perryman, 2006). By the late 1950s medical librarians – and librarians in general – were working to also provide health and medical information to the general public (Perryman, 2006).

2.1.4 The 1960s

The 1960s witnessed the passing of the Medical Library Association Act, which aided medical libraries in developing more effective services and resources to meet the needs of their medical professionals and created a national system of regional medical libraries in order to bring equal information access to medical professionals (Wolfgram, 1985). This act pushed hospital libraries and librarians to be the bridge between the medical professionals and the information resources.

How did all this impact patient libraries? The new emphasis on service to users and communications between libraries and networks marked an important shift from the library being a building of books to it becoming a service whose connections and resources stretch beyond its physical walls (Wolfgram, 1985).

2.1.5 The 1970s

Hospital libraries experienced a period of growth during the 1970s – new services were introduced to both medical and patient libraries, new technologies were being installed in hospitals and with that new technology came new roles and responsibilities for the medical librarians. Medical librarians began to cater more to their users, developing specialized services such as placing the first clinical librarian on the University of Missouri-Kansas City staff to work solely on biomedical information needs in 1971 (Wolfgram, 1985, p. 36).

At the North Memorial Center in Minneapolis, librarians began attaching relevant medical articles to patients' charts in 1976, making pertinent medical literature available at the

patient's bedside for the first time (Wolfgram, 1985). Later that year in Cambridge, Massachusetts, public and medical librarians worked together to establish the Community Health Information Network (CHIN), in order to increase public health literacy and awareness (Wolfgram, 1985).

2.1.6 The 1980s and 1990s

In 1984, the International Federation of Library Associations and Institutions (IFLA) published the *Guidelines for Libraries Serving Hospital Patients and Disabled People in the Community* (Panella, 1996). This publication outlined the particular training and education necessary for working in such special environments, as well as the dire need for patient librarians' involvement in national library associations (Panella, 1996). The committee that created these guidelines was not strictly from the United States. Also included were representatives from the United Kingdom, Belgium, Norway, Sweden, France, Germany and the Netherlands; patient libraries were officially a global concept (Panella, 1996).

It can be argued that the next major movement of patient libraries after the 1970s was the technology or Internet boom that began in the 1990s (D'Alessandro & Dosa, 2001). The proliferation of Internet access to online consumer health information transformed the patient-doctor relationship by empowering the general public and the general patient (D'Alessandro & Dosa, 2001). An awareness of the consumer's right to information created a surge of interest in patient libraries during the 1990s (Holst, 1991). At that time, it was admitted that patient libraries "are directed at providing nontechnical information about illness and health for the lay public, rather than the recreational and therapeutic value of the general book collection"

(Holst, 1991, p. 6). The general public no longer had to take the doctor at their word. The average person could find the information on their own and have questions ready for the doctor.

2.1.7 The 2000s

The Internet boom of the 1990s brought information directly into people's homes. By 2001, more than half of Internet users said they searched the Web for health information (D'Alessandro & Dosa, 2001). Yet Google's simple search engine interface and endless search results often left people feeling frustrated and confused (Bottles, 2009). As they did with the burst of medical publications in the 1950s, hospital librarians had to make sense of the health information available on the Internet. How to organize it? How to tell if it is reliable information? How to make it easily accessible to the public?

The traditional model for the dissemination of medical information relied on the physician providing it to the patient. With the Internet, the physician-patient relationship dwindled as the Internet and the "empowerment" of the patient intervened (D'Alessandro & Dosa, 2001). And so the patient libraries stepped in to help the patients and families find the correct information. Northwestern Memorial Hospital in Chicago adopted the view of librarians as honored guests in the lives of their patients, politely offering information and guidance through every step of the hospitalization, from pre-operative preparation and helping them understand the surgery or treatment, to disease and pain management after discharge from the hospital (Zipperer, Gillaspy, & Goeltz, 2005).

In a healthcare system in Wisconsin, the librarians started “patient information rounds”, where they visited patients that, according to medical staff, wanted additional health information (Strube, Hoffmann, Melchior, Egebo, & Webb, 2006). They worked closely with the individual patient’s doctors and nurses to make sure the medical team was aware of the information and services provided to the patient. Even when the librarians are not at the patient’s bedside, they are working on committees and medical rounds to ensure that patient education materials are not only available, but also relevant and understandable (Galganski, Phillips, & Ross, 2005). Moreover, hospital librarians have become strong advocates for the education and empowerment of the patients.

In addressing the current and future roles of hospital librarians, Holst et al (2009) outlined five goals identified by hospital administrators in a 2002 survey. Their 2009 white paper elaborates on how hospital librarians are contributing to each goal. The contributions are summarized as follows:

1. Clinical care: The combination of librarians’ search and retrieval skills with the knowledge base of doctors, nurses and hospital staff is an educational experience for everyone and “enables the development of patient education materials...based on the best available evidence and written to be representative of local practice” (Holst et al., 2009, p. 287).
2. Management of operations: Hospital librarians support quality care by performing research for those involved in quality improvement efforts, providing them with comprehensive research and making resources easily accessible whether online or within the department (Holst et al., 2009). They contribute to profitability in

- providing information in a very timely manner, saving medical staff time and money in resources and patient care. Through distribution of corporate, government and copyright compliance guidelines and evidence-based practice information, librarians also help reduce corporate risk (Holst et al., 2009).
3. Education: Technology and online resources have helped librarians break from their traditional roles. They are partnering with hospital administration to assist in the continuing education of all levels of hospital staff, teaching staff how to use online resources in formal and informal training sessions and providing access to relevant resources (Holst et al., 2009).
 4. Innovation and research: “The transfer of new knowledge into practice leads to innovation” (Holst et al, 2009, p. 288). To have knowledge you must have information and the efficiency of searching, gathering and distributing information is one of the skills of librarians that can support the facilitation of “the translation of bench and clinical research into clinical practice” (Holst et al., 2009, p. 289).
 5. Customer service: Another role of the empowered patient is choosing the organization from which to receive care; therefore, patient, family and community opinion of a hospital is vital to its survival. Hospitals need to be able to cater to a large sundry of religious, cultural and educational needs and libraries can assist with this by “marketing their services directly to patients and their families, selecting, personalizing, and filtering quality information for them at their health literacy levels” (Holst et al., 2009, p.289).

The contributions of hospital librarians directly benefit the employees and communities through “staff satisfaction with their jobs and patient and family satisfaction with the health care that they receive” (Holst et al., 2009, p. 290).

From their roles as resources of bibliotherapy in mental asylums to providing information in medical rounds, at the bedside, and far beyond the library walls, hospital libraries and librarians have developed with the changing needs of patients and hospital staff alike.

2.2 Information, Emotion and Pediatric Patient Families

In an article describing her personal experience as a mother of a NICU baby, Margo Charchuk discusses hope, saying it helps parents “find the strength and resilience they need to cope with the challenges they face in dealing with a critically ill newborn” (Charchuk & Simpson, 2005). She hoped for many things: that her baby would live, that she was being a good mother, that she was doing everything to ensure his safety and health (Charchuk & Simpson, 2005). Those hopes and her positive attitude increased when she was able to be more involved in his care, even if only by rubbing his back to comfort him while nurses poked and prodded him with needles (Charchuk & Simpson, 2005). It was only when she was given no information about her child did she completely lose hope and was overcome by feelings of powerlessness, isolation and exclusion (Charchuk & Simpson, 2005).

In comparison, interviews with 16 NICU fathers in Canada found that the feeling of lack of control was very common, but that for some fathers it eased their anxiety (Arockiasamy, Holsti, & Albersheim, 2008). By not having any control over their child’s condition or care and

placing all control in the hands of the medical team, the fathers were relieved of their stress, guilt, and worry. However, for those who needed some feeling of control, obtaining information was vital (Arockiasamy, Holsti, & Albersheim, 2008).

Stepney, Kane and Bruzzese (2011) developed a three-phase model of coping to explain the stages parents go through when confronted with their child's diagnosis of chronic illness. The model was developed using "prior school-based research" focused on teenagers with asthma and their families and a comprehensive literature review on "psychological aspects of pediatric chronic illness" (Stepney, Kane, & Bruzzese, 2011, p. 341). Therefore, the research can be applied to other chronic illnesses (Stepney, Kane, & Bruzzese, 2011). The first phase is the "emotional crisis" where parents experience denial, grief, powerlessness, anxiety and guilt (Stepney, Kane, & Bruzzese, 2011, p. 341). The second phase is when they "face reality" and return to daily routines, seek illness management and education sources, and begin to develop coping skills (Stepney, Kane, & Bruzzese, 2011, p. 342). The final phase is when parents are finally "reclaiming life" by gaining a sense of control and capability to care for the illness, developing family routines that incorporate the illness, and establishing family rituals that reduce anxiety and restore a sense of normalcy or stability to the family (Stepney, Kane, & Bruzzese, 2011, p. 342).

Maltby, Kristjanson, and Coleman (2003) describe three similar steps regarding how parents' parenting competency is challenged when a child's diagnosis of a chronic illness disrupts normal family functioning (Maltby, Kristjanson, & Coleman, 2003). Based on face-to-face interviews with 15 mothers of children with asthma, three primary phases are identified: "Parenting competence challenged: naming asthma", "Parenting competence uncertainty:

taking on reality” and “Parenting competence reclaimed: getting on with it” (Maltby, Kristjanson, & Coleman, 2003, p.369). In the first phase, parents commonly felt fear and anxiety, which were followed by grief for the loss of the “healthy child” and additional emotions of denial, anger, guilt, sadness and depression (Maltby, Kristjanson, & Coleman, 2003). The second stage found continued uncertainty of their competency as parents, anxiety and guilt, as well as “increased domestic output” and “greater vigilance of the child’s health and an assessment of positive and negative support persons” (Maltby, Kristjanson, & Coleman, 2003, p. 371). The final phase, “getting on with it”, saw the development of management and coping strategies for the benefit of the child and the entire family (Maltby, Kristjanson, & Coleman, 2003). Even though the parents still felt fear and continued to worry, they also experienced a new sense of control in this phase. (Maltby, Kristjanson, & Coleman, 2003).

This supports findings in studies on families of pediatric cancer patients, in which parents cite the diagnosis as devastating to them as well as the siblings, accompanied by feelings of shock, anger, stress and exhaustion (Coffey, 2006; Soanes, Hargrave, Smith, & Gibson, 2009; Woodgate & Degner, 2002). As time passes, parents become more confident in their own capabilities of dealing with their child’s condition, as well as their abilities to seek information (Hummelinck & Pollock, 2006). Challenges regularly faced by families of chronically ill children consists of making sense out of life, managing daily life, including all the special care associated with the child’s condition, and simply keeping the family unit together and functioning one day at a time (Cohen, 1995; Woodgate & Degner, 2002).

In interviews and focus groups with 14 parents of children with cancer in Sweden, Ringner, Jansson and Graneheim (2011) found that some parents felt like unwelcome guests in

the hospital when their information needs were not met. The hospital staff spent time treating the child, of course, but did not set aside any time specifically for the parents to ask them questions away from the child, thus increasing the parents' feelings of uncertainty, anxiety, abandonment and loneliness (Ringner, Jansson, & Graneheim, 2011).

In describing her own experience as a mother with a child in the NICU, Charchuk confessed that NICU mothers felt at times that they had to stay on the good side of the medical staff in order to access information; if they were rude or acted "too hysterical," they felt the staff would be more hesitant to share information about their child (Charchuk & Simpson, 2005). Parents also recognized the doctors' control over the disclosure of information – how much and what – and confessed feeling a need to behave so that the doctor would feel comfortable sharing more information (Arockiasamy, Holsti, & Albersheim, 2008; Charchuk & Simpson, 2005).

Most parents of ill children want information, some want it all immediately while others want it at a slower speed; therefore, healthcare professionals should always provide easy access to information, but should also consider the family's preferences and coping styles when sharing information (Hummelinck & Pollock, 2006; Fisher, 2001; Woodgate & Degner, 2002).

2.2.1 Information Avoidance

In the early 1980s, Miller outlined two ways of cognitively coping with information: monitoring and blunting (Miller, Brody, & Summerton, 1988). Monitoring is information seeking for the purpose of understanding the problem or threat so that the individual is more prepared to act or react accordingly with the ultimate goal of regaining control of the situation

(Lalor, Begley, & Galavan, 2008; Miller, Brody, & Summerton, 1988). Blunting is actively avoiding information related to the threat even though uncertainty remains (DuBenske, Beckjord, Hawkins, & Gustafson, 2009; Lalor, Begley, & Galavan, 2008).

Between 2004 and 2006, Lalor, Begley and Galavan (2008) held in-depth interviews with 42 women whose children were diagnosed with foetal abnormalities in order to understand their information preferences. The interviews were held at three stages: within 4-6 weeks of diagnosis, 4-6 weeks before the birth, and 6-12 weeks after birth (Lalor, Begley, & Galavan, 2008). Lalor, Begley and Galavan (2008) found that mothers fit into Miller's two distinct coping styles, wanting either a lot of information or none at all. Those mothers who were described as monitoring had difficulty handling uncertainty and so access to information was extremely important. The information reduced uncertainty and anxiety, but the relationship and information-sharing with their healthcare provider proved essential in their management of and coping with the diagnosis as well as their decisions to terminate or continue the pregnancy (Lalor, Begley, & Galavan, 2008).

For those in the blunting description, their outlook of "I'll cross that bridge when I come to it" continued throughout the entire consultation and treatment process, though some noted that their husbands were asking all the questions and constantly seeking information (Lalor, Begley, & Galavan, 2008). When confronted with too much information or information they were not prepared for, these mothers felt high anxiety and felt that the information was forced upon them (Lalor, Begley, & Galavan, 2008). At the conclusion of the study, it was recommended to healthcare providers that information be available in a variety of formats so

families can easily access the information when they are ready for it (Lalor, Begley, & Galavan, 2008).

Such anxiety and fear are closely related to information avoidance (Case, 2005). When parents have a child with a chronic or life-threatening condition, they often feel of sense of powerlessness (Arockiasamy, Holshti, & Albersheim, 2008). This loss of power or control over a situation may either lead to information overload and increased anxiety (Bawden & Robinson, 2009) or lead the individual to view information seeking as pointless because they do not want to learn about something over which they have no control (Case, 2005). In analyzing the questionnaire responses of thirty-seven parents/caregivers of children with chronic feeding problems, it was found that parental/caregiver stress was negatively related to coping strategies, including understanding the child's condition (Garro, Thurman, Kerwin, & Ducette, 2005). With the rise of patient empowerment and PFCC in pediatric hospitals, the sense of powerlessness and lack of coping may decrease as more healthcare professionals are expecting and encouraging families to be more active and involved in their children's care.

2.2.2 Information Seeking

Lambert and Loiselle (2007) identify health information seeking behavior as the key coping strategy for patients and their families, aiding in the psychosocial adjustment to the chronic illness. Information seeking helps the patients and families define and understand their roles within the medical decision-making (Lambert & Loiselle, 2007).

Jackson et al (2007) provided questionnaire interviews to 53 parents of children with brain tumors at four points in time: at the time of diagnosis, 6 months post-diagnosis, 1 year

post-diagnosis and 2 years post-diagnosis. The need for information was consistent across all four time periods (Jackson et al, 2007). One father noted that the small bits of information the medical staff provided him “kept him going” through the early stages (Jackson et al, 2007, p. 99). Additionally, it was found that families frequently sought practical information, such as hotel accommodations and hospital parking, while their child was hospitalized. A variety of information is needed during the child’s hospitalization and the fear, anxiety and uncertainty never cease (Jackson et al, 2007).

A diagnosis of a chronic or life threatening illness completely alters a family’s life, impacting not only the patient and parents, but also siblings, family and friends (Soans, Hargrave, Smith & Gibson, 2009). Cameron and Gregor (1987) define chronic illness as a “lived experience, involving permanent deviation from the normal, caused by unalterable pathological changes” (p.672). Chronic illness has also been described as a “cataclysmic event” that completely shatters the prior reality of the parents’ world (Cohen, 1993; Massie & Massie, 1975).

At the point of diagnosis, parents often feel immediate shock and often are not prepared for additional information; some are overwhelmed by the amount of information given to them by the doctor (De Rouck & Leys, 2009). For some parents, the diagnosis brings a feeling of relief, knowing the name of the cause for their child’s difficulties is viewed as a turning point from uncertainty (Fisher, 2001). Parents in the NICU experience an immediate loss of the expected parental role, and information seeking is a way to regain some sense of control (Arockiasamy, Holsti, & Albersheim, 2008; De Rouck & Leys, 2009). Similarly, parents of chronically ill children feel a total loss of normalcy. Their world is immediately “off balance”

upon learning of diagnosis, and it may take a few days to regain any sense of comprehension or even a readiness to deal with their new reality (Fisher, 2001; Gundersen, 2011).

Because it provides immediate access to vast amounts of information, the Internet has been associated with the rise of the empowered patient (Gage & Panagakis, 2012). Still, studies find that the most trusted source for information is the healthcare professional (Cunningham et al., 2008; Cutilli, 2010; Lambert & Loisel, 2007; Patistea & Babatsikou, 2003; Rahi, Manaras, & Barr, 2003; Soanes, Hargrave, Smith & Gibson, 2009). Social networks, such as family and friends, are relied upon primarily for emotional support (Vaughn et al., 2011). Online social networks such as Facebook and Caring Bridge are used as an easy way to keep family and friends updated on their child's condition so that the parent can avoid the emotional stress of having to constantly talk about it (Gage & Panagakis, 2012). Support groups connecting families of children with the same diagnosis are met with differing reactions. Some parents completely avoid them out of fear of the difficulties that lay ahead, while others rely heavily upon them, seeking comfort and understanding in discussing experiences with those who have been there, done that (Gage & Panagakis, 2012; Gundersen, 2011).

The Internet is the second most trusted source of health information behind the healthcare professional (Cutilli, 2010; Khoo, Bolt, Babl, Jury & Goldman, 2008). In interviewing 360 parents of pediatric patients in Australia, Khoo, Bolt, Babl, Jury and Goldman (2008) found that when turning to the Internet for health information, a majority of parents start with Google or other general search engines rather than specific websites. Parents seek online information to increase their understanding of the illness or its related treatment and to help shape their questions for the doctors (Hummelinck & Pollock, 2006). Most people access the

Internet from home or from work (Dhillon et al., 2003; Khoo et al., 2008; Knapp et al., 2010). A higher education level is typically associated with greater use and understanding of online health information; low-literacy individuals seek information through other media sources such as radio, television, books and magazines (Cutilli, 2010; Dhillon et al., 2003). Hispanics are less likely to seek information on the Internet than non-Hispanics, relying upon family and friends as their second most trusted source of information behind the healthcare professional (Cutilli, 2010; Ramanadhan & Viswanath, 2006).

However, the demographics as related to information behavior are not always so cut and dry. DeLuca, Kearney, Norton and Arnold (2012) interviewed 44 parents of newborns being screened for a potential metabolic disorder and found the majority of parents were driven to the Internet by the sheer unfamiliarity and seriousness of the disorders, regardless of their educational backgrounds, ethnicity or barriers to computer access.

Walsh, Hyde, Hamilton and White (2012) surveyed 578 parents of pediatric patients in an effort to better understand the sociocognitive processes behind their use of online health information. They found that parents took to the Internet primarily to better understand a diagnosis or treatment, instead of actually trying to diagnose or treat the child themselves (Walsh, Hyde, Hamilton, & White, 2012). Parents also turn to online health information because the doctor did not initially provide enough information, but they often view the online information as conflicting and difficult to understand (Walsh, Hyde, Hamilton & White, 2012). Additionally, parents noted it would be helpful to have their healthcare professionals or a hospital library direct them to reliable websites related to their child's diagnosis (Walsh, Hyde, Hamilton & White, 2012). By providing an "information prescription" that directs the patient

families to websites specific to their child's condition, the risks of "misguided and inappropriate information tainting the consultation process" is significantly reduced (Wainstein, Sterling-Levis, Baker, Taitz, & Brydon, 2006).

To better understand how parents of pediatric patients use the Internet for information seeking, Gage and Panagakis (2012) interviewed 41 parents of pediatric patients and found that the healthcare professionals specifically told the parents to avoid looking for medical information on the Internet because it is untrustworthy. Therefore, it was not surprising that the 41 parents in their study overwhelmingly cited the doctor as their most trusted source for information related to their child's condition. Additionally, they obtained supplementary information from their medical team and the hospital library (Gage & Panagakis, 2012). The parents who did turn to the Internet for health information did so with great apprehension, being careful to check the reliability of the website, including consulting only .gov or .org websites and never .com websites (Gage & Panagakis, 2012).

Upon returning home after a hospital stay or treatment, parents still need information and communication with their healthcare professionals (De Rouck & Leys, 2009; Jackson et al., 2007). One study involving telephone interviews of 112 childhood cancer survivors and families at point of treatment completion found that the most requested information was about the fertility of the survivor, and that the large majority of requests came from the parents (Wakefield, Butow, Fleming, Daniel & Cohn, 2012). In a separate study, survivors of childhood cancer noted a high need for information on the late effects of cancer and cancer treatment (Knijnenburg, Kremer, van den Bos, Braam, & Jaspers, 2010).

Uhl et al. (2013) conducted focus groups and surveys on 134 parents of pediatric patients and identified uncertainty, fear, and lack of control as the main factors in parents' distress (Uhl et al, 2013). To cope with such emotions, families often search for information, whether it is to become more active in their child's care or to realize that they are not alone in their experience (Ben-Sasson, 2011). In order to bridge the gap between the patient family and the information, we must first understand where they look for information and what type of information they seek. If the family is provided relevant and reliable resources, the "knowing" could calm their fears, help them form questions to ask their doctors and give them understanding so that they can better care for their child. Uhl et al. (2013) found that timely, accurate information is vital to parents' confidence in their child's care. Being well informed can help families understand the hospital system and treatment, thus allowing them to better support and care for their child (Jackson et al., 2007). The right resources give families the knowledge to become more active and confident in their child's care.

2.3 Evidence-Based Practice

Prior to the evolution of the empowered patient and the accessibility of health information via the Internet, the treatment, care and diagnosis of the patient was based primarily on the doctor's personal experience and knowledge (Majid, et al., 2011). EBP marks the transition from "the traditional emphasis on authoritative opinions to an emphasis on data extracted from prior research and studies" (Majid, 2011, p. 229). Simply put, EBP is the "concept of providing evidence to validate practice" (Cameron et al., 2005, p. 124). Bennett and Bennett (2000) provide a slightly more in-depth definition: "a process that synthesizes clinical

expertise with the best evidence available from systematic research, and the values and preference available from systematic research, and the values and preferences of patients” (p. 172).

EBP can be applied to a wide variety of disciplines and is not restricted to those in healthcare settings. However, due to this study’s focus on the medical environment, EBP will be primarily limited to evidence-based medicine (EBM) and evidence-based nursing (EBN).

2.3.1 Evidence-Based Medicine

The concept of EBM dates back to mid-eighteenth century France, where physicians emphasized “the need for external evidence, as opposed to pathophysiological inference, when making decisions about diagnosis, therapy or prognosis of individual patients” (Wiebe, 2000, p. 10). One French physician, Pierre Louis, used such external evidence to initiate the demise of the “millennium-old practice” of blood-letting (Wiebe, 2000, p. 10).

The term “evidence-based medicine” was coined at McMaster University Medical School in the 1980s (Cameron et al., 2005) but was not widely known or explored in the modern medical world until the 1990s (Hjorland, 2011; Holmes, Perron, & O’Byrne, 2006). Sackett et al. (1996) provided the definition most widely used today: EBM is “the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients” (p. 71). They go on to clarify that practicing EBM means “integrating individual clinical expertise with the best available external clinical evidence from systematic research” (Sackett et al, 1996, p. 71). Clinical expertise is knowledge that is gained from

experience (Sackett et al., 1996; Sackett, 1997). External clinical evidence is data gained from systematic reviews (Sackett et al., 1996; Sackett, 1997).

Systematic reviews are considered the “gold standard” for judging treatments because they are more likely to inform rather than mislead (Sackett, 1997; Winch, Creedy, & Chaboyer, 2002). More specifically, systematic reviews critique all relevant literature and identify “which interventions work, those which are not as effective and where more research should be conducted” (Winch, Creedy, & Chaboyer, 2002, p. 157). They are also used to establish best practice guidelines (Winch, Creedy, & Chaboyer, 2002). These collections are used by clinicians as a “one-sheet, bottom-line, critically appraised topics to which they can quickly refer for specific clinical questions” (Wiebe, 2000, p. 12).

Studies estimate that in order for clinicians to stay abreast of the latest studies, they would have to read 19 articles every day for 365 days (Sackett et al., 1996; Wiebe, 2000). Therefore, it is not surprising that a lack of time is one of the primary barriers of understanding and implementing EBP (Hauk, Winsett, & Kuricm, 2012).

Sackett (1997) describes EBP as a “life-long, self-directed” learning experience. To clarify, he outlined five steps of EBM:

1. Convert these information needs into answerable questions
2. Track down, with maximum efficiency, the best evidence with which to answer them
(and making increasing use of secondary sources of the best evidence)
3. Critically appraise that evidence for its validity (closeness to the truth) and usefulness (clinical applicability)
4. Integrate the appraisal with clinical expertise and apply the results in clinical practice

5. Evaluate one's own performance

(Sackett, 1997, p. 4)

Since its general acceptance in the medical field, EBP has helped create solutions for patient care, thus increasing the patient's confidence and improving patient outcomes (Cameron et al., 2005).

2.3.2 Evidence-Based Nursing

Florence Nightingale, the mother of modern-day nursing, contributed to EBN through research that ultimately improved various aspects of military medicine, including "characterizing the sick and/or wounded soldier as having the right to adequate food, suitable quarters, and appropriate treatment" (Miller, Ward & Young, 2010, p. 72). By applying knowledge she gained through experience, Nightingale made great changes to public health policies that dealt with the public water supply, sanitation and hunger (Miller, Ward & Young, 2010). This application of best practices is a vital part of all areas of EBP.

The premise of EBN is that when a nurse performs an action, the evidence should show that the action will result a desired outcome (Holmes, Perron, & O'Byrne, 2006). With nurses making hundreds of clinical decisions every day, it is vital that they identify the best practice treatments and make quality decisions (Cameron et al., 2005; Hauck, Winsett, & Kuric, 2012). Resources such as Cochrane Database of Systematic Reviews, National Guidelines Clearinghouse, professional journals and databases all assist doctors and nurses in implementing EBP and therefore providing the best possible patient care (Cameron et al., 2005; Hjørland, 2011; Holmes, Perron, & O'Byrne, 2006).

The Magnet Nursing Program began in the 1990s in response to a severe nursing shortage (Miller, Ward, & Young, 2010). The Magnet Program is “a coveted recognition awarded by the American Nurses Association Credentialing Center (ANCC) to health care organizations that excel in the development of professional nursing practice environments” (as quoted in Miller, Ward, & Young, 2010, p. 73). Magnet’s criterion for quality care considers 28 indicators, seven of which involve the application of research and EBP into regular clinical practice (Drenkard, 2009). In comparing hospitals with Magnet recognition and hospitals without Magnet recognition, it is shown that those with Magnet recognition consistently produce more favorable patient outcomes such as “decreased mortality rates...decreases in preventable complications...and increased patient satisfaction with care” (Miller, Ward, & Young, 2010).

Furthermore, EBP has become an expected basic skill for graduating nurses (American Association of Colleges of Nursing, 2008). Thus, the practice of and need for EBP will only increase. Organizational support is vital to the understanding and implementation of EBP in all areas of medical practice – doctors, nurses, allied health (Cameron et al., 2005; Miller, Ward, & Young, 2010). Necessary organizational support includes increasing access to computers, requiring evidence for changes in policies and practices, encouraging professional development, and providing library resources (Miller, Ward, & Young, 2010).

2.4 Information Needs of Hospital Staff

Case (2012) defines information need as a “recognition that your knowledge is inadequate to satisfy a goal that you have” (p. 5). Ehikhamenor (1990) provides a more specific

definition, saying it is “the extent to which information is required to solve problems, as well as the degree of expressed satisfaction or dissatisfaction with the information” (p. 149). Wilson (2000) proclaims information needs vary according to factors such as resources available, how the information will be used, and the motivation and profession of the individual seeking the information. To be information literate, one must “recognize when information is needed and have the ability to locate, evaluate and use effectively the information needed” (Callinan, McLoughlin, & McCarthy, 2010, p. 287). Information resources are deemed “efficient” if they provide “relevant, useful, specific and accurate information that could help users solve their problems” (Nwagwu & Oshiname, 2009, p. 26).

Information is needed by hospital staff for a wide variety of reasons: patient care and treatment, policies and procedures, guidelines, conference presentations, continuing education, publications, on the job training tasks, implementation of new programs or services, or personal use. Such information needs are the “driving force behind literature searching and literature retrieval” (Davies, 2011, p. 249). Information for patient care is often needed in an extremely timely and efficient manner; failing to obtain information in such situations could cause delayed or uninformed decisions, ultimately resulting in medical errors or poor patient care (Clarke et al., 2013).

Clarke et al (2013) found that the most frequent information needs among doctors and nurses were associated with diagnoses, drugs and treatment/therapy. Nurses were most often searching for information on policies and procedures while doctors most often sought information for diagnostic reasons (Clarke et al., 2013). In a survey of nurses in Nigeria, Nwagwu (2009) discovered that the most common information needs were personal reasons,

improved job performance, and patient care. Bertulis and Cheeseborough (2008) specify that nurses require a variety of services, including print resources, support from people, and online information.

The biggest barrier to information is a sheer lack of time (Clarke et al., 2013; Davies, 2011). In this age of evidence-based practice, information is of utmost importance for hospital staff (Callinan, McLoughlin, & McCarthy, 2010). In a study of nurses throughout the United Kingdom, it was found that staff whose organization openly supported research and EBP reported more time for information-seeking efforts, better access to resources, and were more skilled at using electronic resources and databases (Bertulis & Cheeseborough, 2008).

In a study of primary care physicians in eastern and central Kentucky, Andrews et al (2005) specified that although technology provides great promise of increased information access, the “lack of knowledge about sources or the significant time it takes to seek answers from multiple sources, each with its own interface and architecture, can be major barriers” (p. 211). More specifically, 76% of the physicians surveyed ranked lack of time as largest barrier to research; cost (33%), format of information sources (22%) and information-seeking skills (25%) were the other top barriers to information (Andrews et al., 2005). In regards to direct access to a medical library, 48% had access to a small medical library, 46% to a hospital library, and 21% to a university medical library (Andrews et al., 2005). Only 14% stated they had no access to a medical library (Andrews et al., 2005). Of course, these were primary care physicians, based in a variety of clinical settings and thus not all are in the hospital environment. Some are located in clinics or ambulatory offices. That fact should be noted, but it still stresses the great impact of time – not necessarily location or access – has on blocking doctors from obtaining research or

information. Thus, Andrews et al (2005) call out to medical librarians to increase outreach services so that doctors in all types of environments, especially those within their same organization can have easier access to the library resources.

The second most common barrier is a lack of training or search skills, simply not knowing where to begin searching for information (Clarke et al., 2013; Davies, 2011). In a study surveying 850 hospital clinical staff – medical and dental, nursing, and allied health professionals – Hider, Griffin, Walker, & Coughlan (2009) found that Google was used more than any other electronic resource on a monthly basis, including by 86% of medical and dental staff. Ovid/PubMed was used second most, by 81.6% of medical and dental, 31% of nursing and 40.6% of allied health staff (Hider, Griffin, Walker & Coughlan, 2009). In the same survey, 82% specified a desire for additional training on using Internet resources (Hider, Griffin, Walker, & Coughlan, 2009).

Turner, Stavri, Revere and Altamore (2008) noted that public health medical staff most often used Google to search the Internet because much of the public health information was in the “grey literature,” which is easily accessible through general search engines and not frequently found in peer-reviewed journals. Wilson (2000) stands true in that information needs are determined by many factors. If PubMed does not pull needed information such as grey literature, there is no point in using it. In this particular case, Google was mostly likely the more efficient resource for the staff.

Information overload is another identified barrier to information (Andrews et al., 2005; Clarke et al., 2013). Turner, Stavri, Revere & Altamore (2008) found that public health nurses first consulted colleagues because they were the most efficient and trustworthy sources for

information. Nwagwu and Oshiname (2009) also found that nurses in Nigeria turned to colleagues first for information; yet they considered information from lectures, medical and nursing journals, workshops, conferences, the Internet and libraries more relevant resources than colleagues. They referred to colleagues first because they were the most accessible and most direct resource.

The cure for each of these barriers is librarians (Bertulis & Cheeseborough, 2008; Clarke et al., 2013; Davies, 2011). Librarians can help save time by assisting staff in their research and providing formal training sessions on how to use electronic resources, which would ultimately decrease information overload. One-on-one assistance in locating information, training sessions on using databases or online resources, and email updates on specific, customizable topics would greatly increase hospital staff's confidence and ability in searching for information related to patient care (Callinan, McLoughlin, & McCarthy, 2010; Davies, 2011; Hider, Griffin, Walker, & Coughlan, 2009). Increasing staff awareness of the library, its resources, and reliable Internet resources, could significantly aid hospital staff in understanding where to look for information and how it can benefit them in their daily work (Baro & Ebhomeya, 2011; Bertulis & Cheeseborough, 2008).

2.5 Summary

The studies presented in this literature review illustrate the opportunities and more importantly, the obvious need for librarians to reach out to, engage with, and assist hospital staff as well as patient families with their information needs. From their beginnings as resources of bibliotherapy in mental asylums to a refuge for soldiers during the world wars,

from organizing the Internet's information to contributing to patient care and supporting the empowered patient, hospital libraries have evolved with the times.

This is a time of the empowered patient, PFCC and EBP and information is at the core of it all. Librarians are necessary in ensuring relevant and reliable information is delivered at the time of need (Davies 2011; Holst et al., 2009). When medical librarians have a clear picture of the patients, patient families and hospital staff's information needs, they can better prepare themselves and their libraries to have the proper resources available (Clarke et al., 2013). In order to provide the most relevant and reliable information, the libraries at CMC need to thoroughly understand and anticipate the information needs of the patient families and hospital staff. This study is a first small step toward such understanding.

CHAPTER 3

METHODOLOGY

This chapter includes the discussion of the research design, the sample, the research questions, the data collection and the data analyses. The data collection instruments were created by the librarians strictly for the purpose of collecting library usage statistics. Therefore, there is no test of the validity, reliability of the instruments. This research is designed to analyze the information requests statistics and to discover the story they tell about the patient families and hospital staff usage of the libraries to find information.

3.1 Research Design

When evaluating the use of libraries as well as the needs of library users, most studies turn to qualitative methods, such as surveys, questionnaires, focus groups or interviews. This is evidenced by the fact that all the studies cited in Chapter 2 involve qualitative methods; none of the studies use library statistics in any way. In fact, an exhaustive search of the literature resulted in no known studies of any library using library statistics to evaluate user information needs. In this particular study, due to the hospital's lack of support for qualitative methods, the researcher felt the analysis of the library statistics was the best approach to the research problem. As previously mentioned in Chapter 1, this is an obvious limitation, as the usage statistics shed light on only a portion of the picture of library users' needs.

The data was collected from January 2011 to December 2013 by five librarians in four libraries within a pediatric hospital system in Dallas, Texas. It was collected as daily library

usage statistics and ultimately compiled into weekly, monthly and yearly library statistics for the purpose of presentation to hospital administration.

The data consists of information requests submitted to the libraries by patient families and hospital staff. There are a total of eight variables available for patient family information requests. The hospital staff information requests share those eight variables in addition to three more, bringing their total to eleven variables. The data for the two groups were analyzed separately. The raw data was then be compiled and the total data was analyzed by each individual library. By studying the statistics from every angle, the data was able to aptly answer the research questions, recognize areas for improvement in library services and resources, and identify topics for future research.

3.2 Sample

Between the years 2011 and 2013, the Family Resource Libraries received a total of 102,439 visitors. During that time, there was a total of 1,406 requests for information, 848 from patient families and 558 from hospital staff. This research focused only on those 1,406 information requests. The Patient Family information requests were analyzed using eight variables (including the Classification variable); the Hospital Staff information requests were analyzed using eleven variables (including the Classification variable).

For the Patient Family requests, the only data available is the month and year requested, the library in which it was requested, the request type, the resources used, and the time it took the librarian to fulfill the information need. There is absolutely no identifying information.

For the Hospital Staff requests, the only data available is the date requested, the library in which it was requested, the request type, the resources used, the time it took the librarian to fulfill the information need, the reason for the request, the department in which they work, and the job title.

3.3 Dependent and Independent Variables

The dependent variables in this study are request type and resources used. The independent variables are the classification groups: patient family and hospital staff.

3.4 Research Questions

The research questions are designed to analyze how the two primary groups of visitors – patient families and hospital staff – use the libraries to meet their information needs.

Additionally, the questions explore the greater meaning behind the data and what the analyses say about the Family Resource Libraries. This study answers the following questions:

1. To what extent have patient families used the Family Resource Libraries to meet their information needs?

2. To what extent have hospital staff used the Family Resource Libraries to meet their information needs?

3. What is the relationship between Classification (Patient Family, Hospital Staff) and two descriptors of information needs (Request Type and Resources Used)?

A. What is the relationship between Classification (Patient Family, Hospital Staff) and two descriptors of information needs (Request Type and Resources Used) as requested in the Holman Library?

B. What is the relationship between Classification (Patient Family, Hospital Staff) and two descriptors of information needs (Request Type and Resources Used) as requested in the Tower D Library?

C. What is the relationship between Classification (Patient Family, Hospital Staff) and two descriptors of information needs (Request Type and Resources Used) as requested in the Einstein Library?

D. What is the relationship between Classification (Patient Family, Hospital Staff) and two descriptors of information needs (Request Type and Resources Used) as requested in the Karahan Library?

Statistical significance occurred if $p < .05$. If the results were not statistically significant, it was concluded that the Classification has no relationship with the Request Type or Resources Used. If the results were statistically significant, *phi* and Cramer's V were used to clarify the strength of the relationship.

By addressing these questions, the data and the discussion illustrate the extent to which the Family Resource Libraries at CMC have met the information needs of both patient families and hospital staff. Table 3.1 illustrates how each research question was analyzed.

Table 3.1.

Analysis for Research Questions

No	Research Question	Data analysis method
1	To what extent have patient families used the Family Resource Libraries to	Descriptive analyses

	meet their information needs?	
2	To what extent have hospital staff used the Family Resource Libraries to meet their information needs?	Descriptive analyses
3	What is the relationship between classification (patient family, hospital staff) and two descriptors of information needs (request type and resources used)?	Chi-square Test of Independence
A	What is the relationship between classification (patient family, hospital staff) and two descriptors of information needs (request type, resources used) as requested in the Holman library?	Chi-square Test of Independence
B	What is the relationship between classification (patient family, hospital staff) and two descriptors of information needs (request type, resources used) as requested in the Tower library?	Chi-square Test of Independence
C	What is the relationship between classification (patient family, hospital staff) and two descriptors of information needs (request type, resources used) as requested in the Einstein library?	Chi-square Test of Independence
D	What is the relationship between classification (patient family, hospital staff) and two descriptors of information needs (request type, resources used) as requested in the Karahan library?	Chi-square Test of Independence

The first question looks to the patient family requests. What information do the families most frequently request? Does this bring to light any large gaps in the resources at the libraries? What format of information – book, brochure, Internet, subscription databases – was provided to them?

The second question explores the requests from the hospital staff. Exactly what job titles and what departments requested the most information? Is it primarily clinical, administrative, or non-clinical staff, such as pastoral care or child life? Also, what type of information did they request? Was it a specific source? Was it assistance with professional writing or formatting? Was it on behalf of a patient family? Why are they placing these requests? For publication or presentation? For their own continuing education or certification? To create evidence-based guidelines or to understand the reasoning behind patient care policies or procedures? Or is the information for their personal needs?

The third question is the first quantitative research question. It used chi-square analysis to identify the relationship between the Classification variable (Patient Family, Hospital Staff)

and two descriptors of information needs (Request Type, Resources Used). This analysis explores any significant difference between total patient family and total hospital staff information needs regardless of the Family Resource Library.

This research question also includes four sub-questions. These sub-questions employed chi-square tests to identify any significant relationships between Classification and Request Type and Resources Used within the individual libraries.

The four sub-questions are:

- 3A. What is the relationship between Classification (Patient Family, Hospital Staff) and two descriptors of information needs (Request Type, Resources Used) as requested in the Holman Library?
- 3B. What is the relationship between Classification (Patient Family, Hospital Staff) and two descriptors of information needs (Request Type, Resources Used) as requested in the Tower D Library?
- 3C. What is the relationship between Classification (Patient Family, Hospital Staff) and two descriptors of information needs (Request Type, Resources Used) as requested in the Einstein Library?
- 3D. What is the relationship between Classification (Patient Family, Hospital Staff) and two descriptors of information needs (Request Type, Resources Used) as requested in the Karahan Library?

These sub-questions address the information needs at Holman, Tower D, Einstein, Karahan libraries and then explores the relationships between Classification and Request Type and Resources Used.

3.5 Institutional Review Boards

This study was exempt from the University of North Texas Institutional Review Board (IRB) due to the fact that all data was completely de-identified and thus falls outside the scope of the federal IRB's definition of "human subjects."

This study was also not required to go before the Institutional Review Board of CMC or the Institutional Review Board of the University of Texas at Southwestern because it has no identifying information of the patients or the patient families. Additionally, any research involving hospital staff is not required to go before the IRB. The librarians collected the data over three years for the purpose of usage statistics. The director has provided written approval for use of the data for the purposes of this study (see Appendix B).

3.6 Data Collection

Each library at CMC recorded four pieces of information for every visitor to the library. The librarian marked who they were, such as inpatient, outpatient, family of inpatient, family of outpatient, staff, tour; what language they spoke; the mode of contact, such as in person, telephone, email, book mobile; and type of use, such as computer, leisure books, laptops, subscription databases, story time, magazines, medical books or information request.

The library visitor information was compiled into spreadsheets daily, weekly, monthly and annually. For the purposes of this study, only the data pertaining to the information requests was analyzed.

The data used in this study was recorded by the librarians of the Family Resource Libraries beginning in January 2011 through December 2013. The statistics were recorded in order to track the usage of the libraries' research services and were submitted to the library director on a monthly basis. At the end of each year, the librarians compiled all statistics and presented them to the library director. The library director used both the monthly statistics and the year-end statistics as a part of the regular report to the library director's supervisor.

3.6.1 Patient Family Information Requests

The Family Resource Libraries had a form available at the front desk in case any family wanted to take it back to their hospital room to fill it out (see Appendix C). The majority of information requests from families were received and fulfilled verbally in the library.

For each information request, the librarian recorded five pieces of information on a written form kept at the main desk (see Appendix D): the date, the information requested, who requested it (patient family or staff), the librarian's initials, the resources used, and the time it took the librarian to fill the request. This information was written down immediately after filling the request in order to be as accurate as possible.

At the end of each week, the librarian recorded this information in three spreadsheets: specific library (see Appendix E), "Yearly Topics" (see Appendix F) and "Cumulative Topics" (see Appendix G).

At the end of each month, one librarian compiled all information requests data from all libraries into one spreadsheet, "Information Requests Tracking" (see Appendix H). This spreadsheet was updated on a monthly basis and provided year-end data.

3.6.2 Hospital Staff Information Requests

The Family Resource Libraries had a form available at the front desk for any hospital staff wanting to submit a research request (see Appendix I). The majority of hospital staff information requests were submitted verbally, over the phone, or through e-mail. In early 2013, the request form became available online and staff could submit requests electronically through the Family Resource Libraries' intranet site.

Regardless of how the information request was submitted, the librarian recorded the same five pieces of information on the same form used for patient families (see Appendix D): date, information requested, the resources used, and the time spent. Additionally, the librarian wrote down the staff member's job title and department (e.g., Pediatric Nurse Practitioner, NICU). They also wrote out the reason for the request (e.g., presentation, personal or continuing education).

As with patient family information requests, hospital staff information requests were recorded in three spreadsheets: specific library (see Appendix E), "Yearly Topics" (see Appendix F), "Cumulative Topics" (see Appendix G). The hospital staff information requests data was entered into an additional spreadsheet, "Staff Requests" (see Appendix J).

At the end of each month, one librarian compiled all patient family and hospital staff requests in the "Information Requests Tracking" spreadsheet (see Appendix H). Again, this spreadsheet was updated on a monthly basis and at the year's end.

3.7 Data Analyses

From January 2011 through December 2013, the Family Resource Libraries received a total of 1,406 information requests. Of those, 848 were from patient families and 558 were from hospital staff. The data was recorded by a total of five librarians and was not originally recorded for the purposes of this research. Therefore, there is a possibility that some elements were not recorded or were inconsistently recorded.

It must be noted that this researcher worked in the Holman Library and Tower D Library from May 2009 – November 2013. While five librarians (including the researcher) recorded the statistics, the researcher was the only individual involved in the analyses.

The Statistical Package for Social Sciences (SPSS) version 22 was used to analyze the data. The information requests were entered individually, with eight variables recorded for all requests. Hospital staff information requests had three additional variables, bringing the total to eleven for that classification.

Table 3.2 lists the variables with their accompanying information. The first column, Name, identifies the variables that were measured. The second column, Applicable Group(s), shows what group – the patient family information requests, the hospital staff information requests, or both – is relevant to the particular variable. The third column, Value(s), illustrates how the data was coded for each variable. The fourth and final column, Measure, describes the statistical level of measurement for each variable.

Table 3.2.

Variables

Name	Applicable Group(s)	Value(s)	Measure
Year	Patient Family Hospital Staff	2011, 2012, 2013	Nominal
Month	Patient Family Hospital Staff	Months retain regular numeric association.	Nominal

Classification	Patient Family, Hospital Staff	Patient Family (1), Hospital Staff (2)	Nominal
Library	Patient Family Hospital Staff	Holman (1), Tower D (2), Einstein (3), Karahan (4)	Nominal
Request Type	Patient Family Hospital Staff	Medical Information (1), Health and Wellness Information (2), Clinical Information (3), Non-Health Related (4), Not Recorded (0)	Nominal
Specific Document	Patient Family Hospital Staff	Yes (1), No (2)	Nominal
Resources Used	Patient Family Hospital Staff	Books (1), Brochures (2), Internet (3), Subscription Databases (4), UT Southwestern Library (5) Other (6), Not Recorded (0)	Nominal
Time Spent	Patient Family Hospital Staff	Recorded in minutes	Interval
Department	Hospital Staff	Coded alphabetically 1-100, Not Recorded (0), Not Applicable (101)	Nominal
Job Title	Hospital Staff	Coded alphabetically 1-76, Not Recorded (0), Not Applicable (101)	Nominal
Reason for Request	Hospital Staff	EBP (1), For Patient Family (2), Presentation (3), Publication (4), Research (5), Schoolwork (6), Other (7), Not Recorded (0), Not Applicable (101)	Nominal

The first eight variables are applicable to all information requests. The last three are applicable only to Hospital Staff information requests. These variables analyze all available data recorded over the three years between 2011 and 2013.

There is one variable not listed in Table 3.2, which is Topic. As explained in the data collection section, the general topics of the information requests were recorded. However, it is not included in the research questions because the variable was not specified by Patient Family information request or Hospital Staff information request. The Topic variable provides additional insight into the information needs, thus it is discussed at the beginning of Chapter 4, separately from the research questions.

Chi-square tests for independence were run on the total information requests, using Classification (Patient Family, Hospital Staff) as the independent variables and Request Type and Resources Used as the dependent variables. Chi-square test for independence, also called Pearson's chi-square, was selected for this research because it compares the observed

frequencies in a certain category with frequencies that may be expected by chance (Field, 2009; Morgan, Leech, Gloeckner, & Barrett, 2007). All variables used in chi-square analysis are nominal and the effect size tells of any significant relationship between the two classification variables and the two descriptors of information requests.

Crosstabulations were used to identify relationships between the classification variables and request type and resources used. These were run first for the total data and then by individual year. For example, for 2011 total data, two crosstabs were run, as illustrated in the Tables 3.3 and 3.4.

Table 3.3.

Request Types 2011

	Medical Information	Health and Wellness Information	Clinical Information	Non-Health Related	Not Recorded	Total
Patient						
Family						
Hospital Staff						

Table 3.4.

Resources Used 2011

	Books	Brochures	Internet	Subscription Databases	UT Southwestern Library	Other
Patient						
Family						
Hospital Staff						

The crosstabulations, run for both of the descriptors for each of the three years – 2011, 2012, 2013 – illustrate any significant relationship between the classification variables and the descriptors.

The Request Type variable produced tables larger than 2x2, thus Cramer's V was calculated to measure the strength of the relationships. The Resources Used variable was analyzed by individual resource, thus creating a 2x2 table and so Phi was calculated. The interpretation of the strength of the relationships followed those outlined by Rea & Parker (1992) (see Table 3.5).

Table 3.5.

Interpretation of Phi and Cramer's V

Values	Interpretation
.00 and under .10	Negligible association
.10 and under .20	Weak association
.20 and under .40	Moderate association
.40 and under .60	Relatively strong association
.60 and under .80	Strong association
.80 and under 1.00	Very strong association

By reporting the effect size, or strength of the association, a deeper understanding of the relationship between the variables is provided.

Assumptions

There are two assumptions regarding the chi-square analyses. First, it is assumed that all observations are independent. Second, it is assumed that the total sample size is four or five times the number of cells.

Methodological Limitations

According to Field (2009), any cell below five results in a weaker statistically significant difference between the variables measured. There is the acceptable count of 20% of cells with

less than five (Field, 2009). In this study, there were some instances in which two cells (33.3%) were less than five. These were unavoidable, as they represented the small frequency of Resources Used for Patient Family and Hospital Staff information requests.

3.7.1 Patient Family Information Requests

Only one variable was not a nominal one: Time Spent was treated as an interval measurement and measures of central tendency – mean, median and mode – were calculated. A frequency distribution was graphed to identify any extreme outliers. This illustrates the average amount of time spent on requests, as well as the range of time spent on information requests for patient families. The standard deviation and range were also calculated.

The nominal variables include: Year, Month, Library, Request Type, Specific Document, and Resources Used. Frequency analyses identify the most requested types of information and the most commonly used resources. Graphing the years and months shows any trends of information requests throughout the year as well as the busiest or slowest months of the year. Exploring if specific documents were requested clarifies if the requestors were coming to the libraries for specific articles or book chapters they were already familiar with, or if they were requesting assistance with more general information research.

The chi-square tests for independence described in section 3.7 provide additional insight into the Patient Family information requests. Those results are discussed further in respect to the relationship by Year, by Request Type, and by Resources Used.

There is a section at the end of the analyses that discusses the interpretation of these particular analyses, specifically as it relates to total number of patient families visiting the

Family Resource Libraries. What percentage of patient families requested information? What percentage did not? This helped answer the first research question: To what extent have patient families used the Family Resource Libraries to meet their information needs?

3.7.2 Hospital Staff Information Requests

As in Patient Family information requests, measures of central tendency – mean, median and mode – were calculated for the Time Spent variable in Hospital Staff information requests. A frequency distribution was graphed to identify any extreme outliers. This shows the average amount of time spent on the information requests for hospital staff, as well as the range of time on requests. The standard deviation and range were also calculated.

The remaining variables, including the three not applicable to patient family requests, are nominal and include: Year, Month, Library, Request Type, Specific Document, Resources Used, Department, Job Title, and Reason for Request. Frequency analyses show the amount of information requests submitted by hospital departments, the types of hospital staff that are asking for information, exactly what type of information they need and why they are requesting the information. Additionally, it highlights the number of requests throughout the years and the busiest and slowest time of the year for hospital staff information requests.

The chi-square tests for independence described in section 3.7 provide additional insight into the Hospital Staff information requests. Those results are discussed further in respect to the relationship by Year, by Request Type, and by Resources Used.

After the SPSS data are presented, there is an analysis of the data as it relates to total number of hospital staff visiting the Family Resource Libraries. How many hospital staff

requested information compared to the total number of visitors? How many used the libraries for other purposes? This assisted in answering the second research question: To what extent have hospital staff used the Family Resource Libraries to meet their information needs?

3.7.3 Information Requests by Library

Once the two classifications of information requests – patient family and hospital staff – were analyzed separately, the raw data was combined and analyzed by individual library. By shifting the primary focus from the classification variable to the library variable, a fresh insight into the data was provided. For example, types of information requested by patient families in the Holman Library may differ greatly from those requested by patient families in the Einstein Library. Also, patient families may request information in brochure format most commonly in the Einstein Library, while in the Holman Library they prefer information from the Internet.

Again, the Time Spent variable was calculated as an interval measure. It shows the average amount of time each library spends on patient family information requests, hospital staff information requests, and total information requests. A frequency analysis was run to identify any extreme outliers. The standard deviation and range were also calculated.

The remaining variables are nominal: Year, Month, Classification, Request Type, Specific Document, Resources Used, Department, Job Title, Reason for Request. Any changes to the libraries' hours, staff, and locations over those years are noted and taken into consideration.

Frequency analyses show how many patient family information requests and hospital staff information requests were fulfilled by each library, including the trends in amount of requests submitted throughout the years and months.

Crosstabulations were run by individual library, as illustrated for the Holman Library in the Tables 3.6 and 3.7. These crosstabs were run using the total data for each library and not the individual year data. This is to ensure there is sufficient data for each variable.

Table 3.6

Frequency of Request Types in the Holman Library

	Medical Information	Health and Wellness Information	Clinical Information	Non-Health Related	Not Recorded	Total
Patient						
Family						
Hospital Staff						

Table 3.7

Frequency of Resources Used in the Holman Library

	Books	Brochures	Internet	Subscription Databases	UT Southwestern Library	Other
Patient						
Family						
Hospital Staff						

Like the analyses of patient family and hospital staff information requests, the library analyses includes a succinct section comparing the total number of visitors to the number of visitors who requested information. This is broken into three groups: patient family, hospital staff, and both classifications combined.

The compiled data and analyses help illustrate and address Research Questions 3A – 3D. Also, the chi-square tests provided more depth to the data, identifying the strength of relationship between the patient family and hospital staff requests and request type and resources used within each individual library.

3.8 Summary

The analyses of the library usage of patient families and hospital staff for information needs and the identification of relationships between Classification and Request Type and Resources Used – for total data as well as for data by specific library – provide an insightful first glance into the use of the Family Resource Libraries for information needs of both patient families and hospital staff.

Discussion of the data analyses focuses on what these analyses – by classification and by library – reveal about the larger picture of all information needs at CMC. What are the exact information needs of patient families and hospital staff? Where is there room for collaboration with departments for more accessible information? These questions were asked separately of the data from the patient family information requests and the hospital staff information requests.

Through specific research questions and careful analyses, these statistics clearly and methodologically show the bones of the information needs of patient families and hospital staff at CMC.

CHAPTER 4

RESULTS AND DISCUSSION

This chapter presents the results of the data analyses as they relate to the research questions. There are three sections in this chapter, one for each research question. The third research question has four sub-questions, which are addressed in the sub-sections of the third section.

Before addressing the research questions, a particular set of data is presented. The data on topics requested could not be broken down between patient family and hospital staff requests and thus could not be applied appropriately to the research questions. Therefore, it is addressed separate from the research questions as it does provide additional insight into the information needs.

In total, there were 369 topics requested from 2011 through 2013. The top three most requested topics varied slightly from year to year. In 2011, they were nutrition, diet, exercise (33 requests), diabetes (21), and school issues (20). The following year saw the nutrition, diet, exercise topic again at the top with 25 requests, followed by autism (17) and asthma (12). In 2013, the top three topics were autism (18), nursing research (13), and nutrition, diet, exercise (12). The rise of nursing research in the top three in 2013 shows the increase of Hospital Staff information requests, while the decreasing total number of requests for the top three topics also hint to the overall decrease in information requests.

Table 4.1 presents the top ten topics in regards to total requests from 2011 through 2013.

Table 4.1.

Top 10 Topics Requested in the Libraries

Topic	Number of Requests
1. Nutrition, Diet, Exercise	70
2. Autism	52
3. Asthma	41
4. Diabetes	40
5. School Issues	37
6. Nursing Research	33
7. ADD/ADHD*	23
8. Cancer	22
9. Epilepsy	22
10. Surgery	21

Note. * = Attention Deficit Disorder/Attention Deficit Hyperactivity Disorder

Some of the 369 topics recorded include specific and rare conditions. There are topics entered for multiple types of cancer; thus, the cancer topic shown at the number eight position of the table does not include all cancer requests. If all entries related to cancer were added to the cancer entry, it would provide an additional 23 requests, bringing the total to 45. However, the raw data was left untouched and so Table 4.1 includes only those that were recorded as the general cancer topic.

This list of topics illustrates the variety of requests the libraries received. Nutrition, diet, exercise represents health and wellness information, while autism, asthma, diabetes, and ADD/ADHD represent the more common conditions found in both children and adults. School issues mark the importance of the health and care of children outside of the hospital, whereas cancer and epilepsy are chronic diseases that require complex care. Nursing Research shows the frequency of research done for nurses. The surgery topic could be requested by both Classification groups; patient families may request it to understand the procedure, whereas hospital staff may request it for research on best practices, guidelines, or policies. This could be true for any of the topics.

Unfortunately, the data does not clarify which of the classification groups requested the topics; nevertheless, it does provide a peak into what topics are most frequently a part of the information needs addressed by the libraries. Although the topics data could not be further analyzed, the other variables provided further insight into the information needs of patient families and hospital staff, as addressed in the following research questions.

4.1 Research Question 1

The first research question is: To what extent have patient families used the Family Resource Libraries to meet their information needs? To fully address this question, the data was analyzed in several ways: by Month, Year, Request Type, Resources Used, Library, and Time Spent.

Month and Year

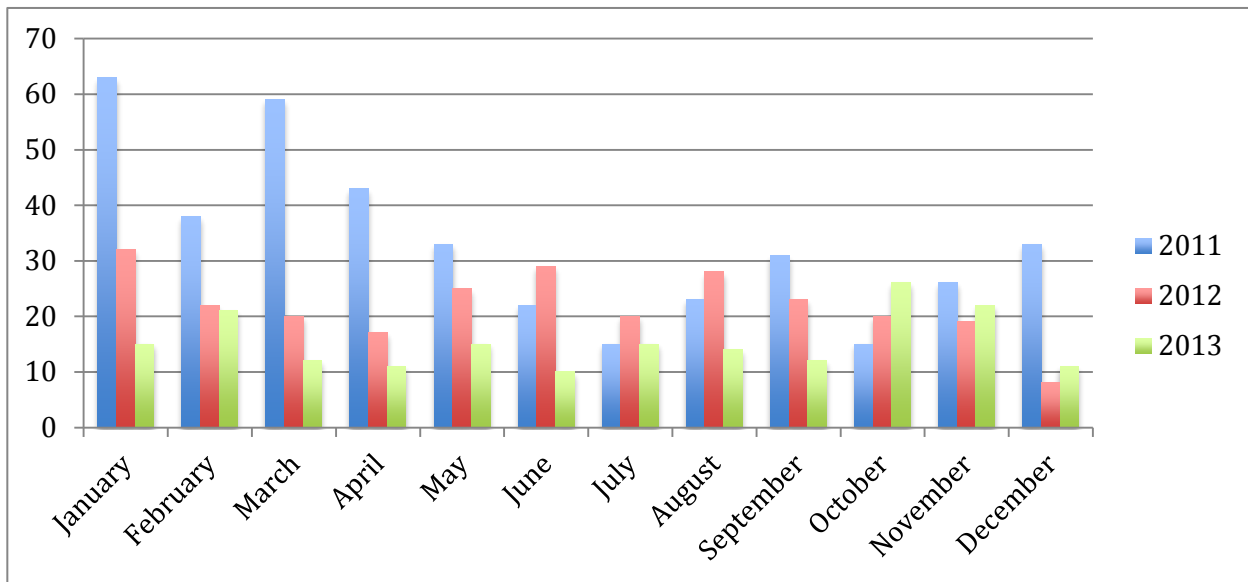
There were a total of 848 patient family requests from January 2011 through December 2013. The patient family information requests decreased a total of 54.1% in that time period. The years 2011 – 2012 saw a decrease of 34.4% in patient family information requests and 2012 – 2013 saw an additional decrease of 30.0%.

There were 401 Patient Family requests in 2011, which is nearly half (47.3%) of the total Patient Family information requests. The following years saw increasingly declining numbers: 2012 had only 263 requests (31.0%) and 2013 received only 184 (21.7%).

The data is further broken down by Month and Year in Figure 4.1, illustrating both the rapid decline in Patient Family information requests over the three-year period and the pattern of requests submitted throughout the months.

Figure 4.1.

Patient Family Information Requests by Month and Year



There is no typical pattern to the frequency of Patient Family information requests by Month. In 2011, the three busiest months were January (63 requests), March (59) and April (43). In 2012, the top three were January (32), June (29), and August (28). In 2013, it was October (26), November (22) and February (21). Hospital census data was not available and thus it is not possible to say if these variations of information requests were at all related to the amount of beds filled or of any influx of diagnoses, such as the flu.

Several factors may have played a role in the overall decline of information requests. First of all, from May 2011 – November 2011 the libraries were short staffed, thus the librarian

at the Einstein Library had to leave the library unattended while she assisted in coverage for the Tower D and Holman Libraries. The Einstein Library is an open library, similar to a waiting area, in which there are no doors. The Holman and Tower D Libraries, on the other hand, cannot be left unstaffed. Therefore, the librarian at the Einstein Library would be the first to assist in coverage with those libraries at the sacrifice of her statistics. When there is no librarian present, the number of visitors does not get recorded and there is no one for the patient families to go to with information requests.

Another factor that may have a role in the decline of Patient Family requests is the closing of the Tower D Library in June 2012. It was located in the main lobby area of the main hospital and received a lot of foot traffic from patient families and hospital staff alike. Its closing left the Holman Library as the only library in the main hospital. The Holman Library is located on the seventh floor of the hospital and, at the time of this study's data collection, it is nestled between the Neonatal ICU (NICU) and general pediatric beds. Compared to the Tower D Library in the main lobby, the Holman Library received considerably less foot traffic and less information requests.

Library

Table 4.2 illustrates the numbers of Patient Family information requests received by the individual libraries. The Einstein Library had by far the most Patient Information requests, receiving 62.6% of the overall total. The Holman Library (14.6%) was a distant second, while the Tower D Library (13.9%) was third and the Karahan Library (8.8%) served the least amount of Patient Family information requests.

Table 4.2.

Patient Family Information Requests by Library

Library	Frequency	Percent	Cumulative Percent
Holman Library	124	14.6	14.6
Tower D Library	118	13.9	28.5
Einstein Library	531	62.6	91.2
Karahan Library	75	8.8	100.0
Total	848	100.0	

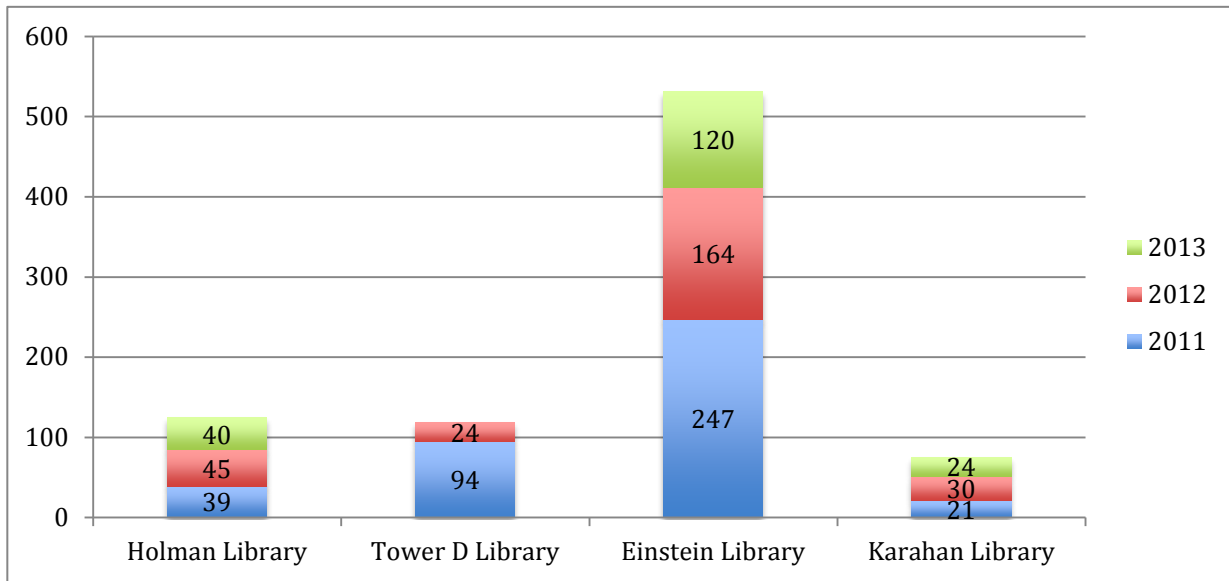
These numbers accurately reflect the populations each library serves. For instance, the Einstein Library is located in the main lobby of the outpatient building and is typically the library with the highest number of patients and patient families. The Holman Library is tucked in the seventh floor of the main hospital, between two acute care areas. Because it is not located in a highly visible, high traffic area, the Holman Library serves a smaller amount of visitors than the Einstein Library. The Tower D Library, located in the lobby area of the main hospital, was permanently closed on June 19, 2012, thus it is not surprising that it has a low number of Patient Family information requests. The data analyzed for the Tower D Library in this study were recorded from January 2011 through June 19, 2012. The Karahan Library serves a significantly smaller hospital campus in Plano, Texas, and has a significantly smaller amount of total visitors.

To further illustrate the use of the libraries for Patient Family information requests, Figure 4.2 shows the number of Patient Family information requests requested in each library during each year. The decrease in Patient Family information requests is apparent, as the Einstein Library received 247 requests from patient families in 2011 and only 120 in 2013. That is a decrease of 51.4% in just one library. The Holman and Karahan Libraries both had an

increase in Patient Family information requests from 2011 to 2012, but both saw a decline in 2013.

Figure 4.2.

Patient Family Information Requests by Library and Year



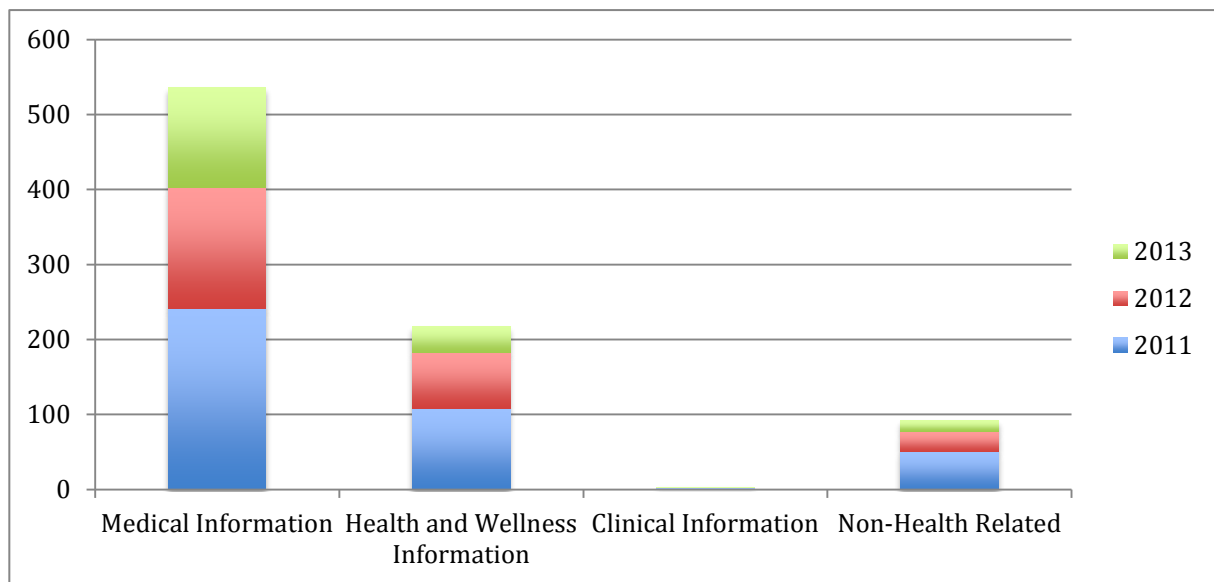
For the Einstein Library, the decline is most likely attributed to the fact that the Tower D Library was closing and the Holman Library was undergoing renovation. Thus, all librarians were needed to pack up the Tower D Library, re-organize the existing storeroom, pack up some of the Holman Library's collection to make room for the renovations (the library stayed open during the construction) and ultimately unpack the Holman Library's collection in its renovated space. This work lasted from June 2012 through October 2012. In 2013, the libraries were fully staffed and were not undergoing any construction; thus it is not clear why there is a further decline in Patient Family requests for the Einstein Library at that time.

Request Type

Patient families requested a variety of information, all of which were grouped into four categories: Medical Information, Health and Wellness Information, Clinical Information and Non-Health Related information. Figure 4.3 illustrates the types of requests from patient families over the years.

Figure 4.3.

Frequency of Request Types for Patient Family Information Requests 2011-2013



Note. The Clinical Information category includes few requests, not visible in Figure 4.3. See p. 75 for the data.

Medical Information was the most common type of information request each year: 2011 saw 241 such requests (60.1% of total requests), in 2012 there were 162 requests (61.6%) and 2013 had 133 requests (72.3%). Although the overall number of requests declined each year, requests for Medical Information remained in the majority. This category included any request related to a medical condition, disease or procedure and any topics involving injury or illness. Examples include asthma, cystic fibrosis, cancer, traumatic brain injury, as well as any rare disease, disorder or procedure.

Health and Wellness Information pertained to the prevention or promotion of health and wellness. For example, topics such as blood pressure, smoking cessation, puberty, and nutrition were included in this category. Health and Wellness Information was the second most frequently requested category each year. The year 2011 saw 108 requests (26.9%), 2012 had 74 (28.1%) and 2013 received 35 (19.0%).

Patient families rarely requested Clinical Information. In total, there were only three such requests from patient families, two in 2011 and one in 2013. Clinical Information differs from Medical Information in that it provides more in-depth clinical focus on a disease, condition or procedure. These are typically medical or nursing journal articles or guidelines. When this type of information is requested by patient families, it may be because the parent has a medical background or that the parents have learned so much about their child's condition that they are self-taught in understanding the clinical and medical language.

The final category of the Request Type variable is Non-Health Related information. The libraries received a sundry of requests in this category: help with homework, yoga and meditation resources, hotel information, and transportation options to name a few. Nevertheless, it was surprising to see so few in this category: 2011 saw only 50 requests (12.5%), 2012 had 27 (10.3%) and 2013 received 15 requests (8.2%). There may be so few in this category because the librarians did not view such questions as bona fide information requests. Because this data was not originally collected for the purposes of this research, there was no formal oversight in the collection of this data and thus there is the possibility of requests not recorded.

A large majority (88.8%) of the information requested by patient families was for Medical Information or Health and Wellness Information. These requests could be directly related to their child's care, such as information on an upcoming procedure, recommended medications, information on a recent diagnosis or even the anatomy of a specific organ. A diagnosis or treatment can alter the child's dietary needs, thus requests for nutritional information or recipes were not uncommon. These categories of requests also included any mental and emotional health information, ranging from psychiatric disorders to behavior problems to a healthy and supportive transition back to school. It is not clear if all of these requests were specific to their child's care; it is quite possible that requests for asthma or diabetes information could either be for their child or for a relative or friend. Perhaps many more patient families came to the libraries seeking such information but were able to find it without the assistance of the library staff. The information requests recorded in this data pertain only to those that were asked of the library staff.

Another factor analyzed was if a specific document, such as an article or book chapter, was requested. This was analyzed to clarify how many patient families and hospital staff were turning to the libraries to locate full text documents, as opposed to a general search request.

For patient families, specific document requests were an infrequent occurrence. In fact, only 14 (1.7%) of the 848 patient family information requests were requests for specific documents. This is not surprising, as many patient families submitted more general information requests.

Resources Used

Each library houses a standard collection of reference, medical, and health and wellness books that are available for checkout. Pamphlets and brochures are also available in each library and they are free for visitors to keep. Information within these pamphlets and brochures include medical information, health and wellness information as well as information for services offered by the hospital and the general community, such as the Ronald McDonald House, home schooling services and organizations offering English and Spanish lessons.

There are desktop computers available in each library with full Internet access and limited filters. Each computer has an extensive list of website bookmarks organized by the library staff. Visitors can search the bookmarks by general condition and disease. This is an efficient way for the visitors to locate reliable health and medical information on the Internet. The library also subscribes to several databases, including EBSCOHost, Nursing Reference Center, Medline and CINAHL.

The University of Texas at Southwestern (UT Southwestern) is a sister hospital to CMC. The hospitals are connected so that staff, faculty, and medical students can walk from one to the other in 10-15 minutes. Many of UT Southwestern's faculty are a part of the CMC staff and their medical students complete their pediatric rounds or residencies at CMC. The resources at the UT Southwestern Library are available for use by any CMC staff, yet remote access is not provided. Therefore, the CMC staff have to physically walk to the library to use their collections.

The "Other" resources used in this study included any database not owned by the CMC libraries or UT Southwestern Library. Also in this category are the local public library and phone calls to other hospital departments. Such departments often included School Services, Social Work, Child Life or Pastoral Care.

The use of these resources for Patient Family information requests is illustrated in Table 4.3. It must be clarified that more than one type of resource could be used to fulfill an information request. The Internet was the most frequently used with 75% of the requests, while Brochures was a distant second with 34.2% of the requests. Not surprisingly, UT Southwestern Library (0.6%), Subscription Databases (5.5%) and Other (4.7%) were the least used resources. There were two instances in which data was not recorded.

Table 4.3.

Frequency of Resources Used for Patient Family Information Requests

Resources Used	Yes (Percent)	No (Percent)	Not Recorded
Books	127 (15.0)	719 (84.8)	2
Brochures	290 (34.2)	556 (65.6)	2
Internet	636 (75.0)	210 (24.8)	2
Subscription Databases	47 (5.5)	799 (94.2)	2
UT Southwestern Library	5 (0.6)	841 (99.2)	2
Other	40 (4.7)	806 (95.0)	2

The frequency of the Resources Used reflects the type of information requested by patient families. As previously presented, patient families requested primarily Medical Information and Health and Wellness Information. Such information is typically found on the Internet as well as through Books and Brochures. CMC’s Subscription Databases and UT Southwestern Library’s resources were consulted mainly for more Clinical Information, which the patient families rarely requested. Although the Other category was used to answer some patient family requests, this category was primarily used in requests for Clinical Information.

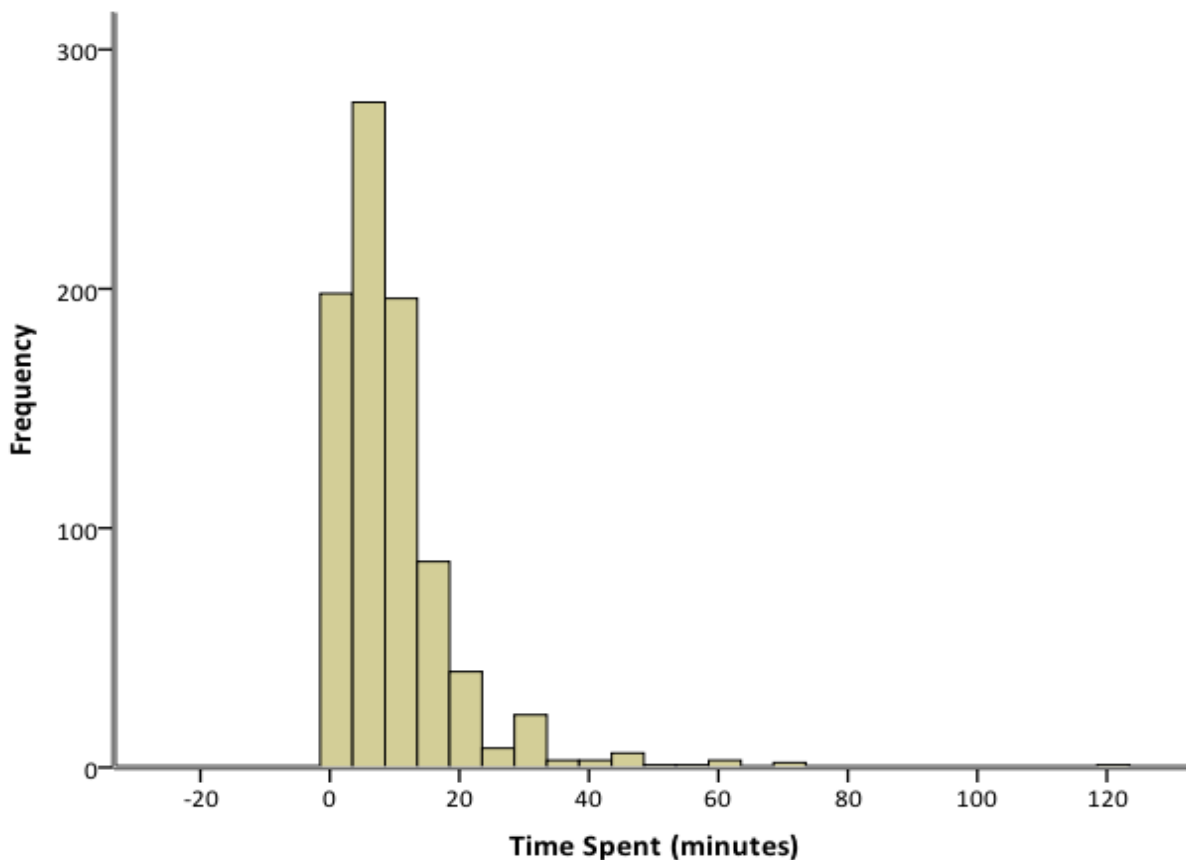
Time Spent

The Time Spent variable measures the amount of time the library staff spent on each request. The data was analyzed with frequencies and measures of central tendency.

There were 848 patient family information requests with no missing data. The minimum amount of time spent on Patient Family requests was one minute while the maximum was 120 minutes. Figure 4.4 shows the frequencies of time spent on Patient Family requests in the form of an SPSS-generated histogram.

Figure 4.4.

Time Spent on Patient Family Information Requests



A majority (94.1%) of Patient Family Information Requests were completed in less than 20 minutes. Furthermore, 476 (56.1%) took five minutes or less. This is understandable, as a

majority of their requests were for basic information on various medical and health and wellness information. The librarians were able to provide such information relatively quickly, whether by handing them a brochure, pointing them to a few books, leading them to reliable websites, or quickly printing out the information from the Internet. Only eight of the 848 Patient Family information requests took more than 45 minutes to complete.

The measures of central tendency were calculated for the Time Spent variable. The calculations produced a mean of 9.18 ($SD = 9.558$), the amount of time at the most central point of the scores. The median was 5, meaning the middle score of the time spent on Patient Family information requests was five minutes. Five minutes was also the most frequently occurring time spent on Patient Family information requests, thus it is the mode. With scores varying from 1 – 120 minutes, the range of Time Spent was 119.

The Time Spent variable for Patient Family information requests was also analyzed by library. These measures of central tendency are summarized in Table 4.4.

Table 4.4.

Measures of Central Tendency for Time Spent on Patient Family Information Requests by Library

Library	N	M	Mdn	Mode	SD	Range
Holman Library	124	14.09	10.00	10	13.018	69
Tower D Library	118	11.34	10.00	5	12.282	118
Einstein Library	531	6.71	5.00	5	6.185	59
Karahan Library	75	15.16	10.00	10	11.115	58

Note. N = number of sample. M = mean. Mdn = median. SD = standard deviation.

The libraries did not vary greatly in the Time Spent category. The Holman Library had a minimum of one minute and a maximum of 70 minutes. The Tower D Library spent a minimum of two minutes and a maximum of 120 minutes, the longest period of time spent on a Patient Family request. The Einstein Library had a minimum of one minute and a maximum of 60

minutes, while the Karahan was not too different with a minimum of two minutes and a maximum of 60 minutes.

Discussion of Findings for Research Question 1

All data considered, to what extent have the patient families used the Family Resource Libraries to meet their information needs? Of a total of 58,615 patient family visits recorded from 2011 – 2013, 848 (1.45%) of those involved information requests. In 2011, there were a total of 19,367 patient family visitors, of which only 401 (2.07%) submitted requests for information. The following year received a total of 20,825 patient family visits with 263 (1.26%) information requests. In 2013, the libraries received 18,423 patient family visits with 184 (0.99%) information requests.

When patient families requested information, it was primarily for Medical Information or Health and Wellness Information. These requests were fulfilled most often by consulting the Internet, where the librarian would locate the information on a reliable website and print it out for the requestor. Thus, the patient family had information to take with them. Brochures were the second most used resource for Patient Family information requests. They were often for more basic information on topics such as asthma, allergies, diabetes, heart health, healthy eating, and exercise. Again, this is a format of information that the patient family could take with them at no cost.

The library staff often met their information needs quickly, as a majority of the requests were answered in less than 20 minutes. Thus, the patient family did not have to wait long for information and could also browse the library for other information or leisure books or

magazines. Or, if they were not comfortable being away from their child's bedside, they could return with their information in a short time.

Patient families also visited the libraries for general Internet access, leisure reading materials, or simply a quiet place to sit, relax, pray or meet family and friends. The information requests consisted of only a small percentage of their total library usage. However, when they did request information, their needs were primarily for medical and health and wellness information, preferably in a format that they could take with them, and were resolved swiftly by the library staff.

4.2 Research Question 2

The second research question is: To what extent have hospital staff used the Family Resource Libraries to meet their information needs? Hospital staff information requests were analyzed in the same manner as the patient family information requests: by Month, Year, Request Type, Resources Used, Library and Time Spent. There were three variables available for Hospital Staff information requests that were not applicable to Patient Family requests: Department, Job Title and Reason for Request.

Month and Year

There were a total of 558 Hospital Staff information requests from January 2011 through December 2013. Hospital Staff information requests increased throughout the three-year time period. The libraries saw a 13.0% total increase in Hospital Staff requests, from 176

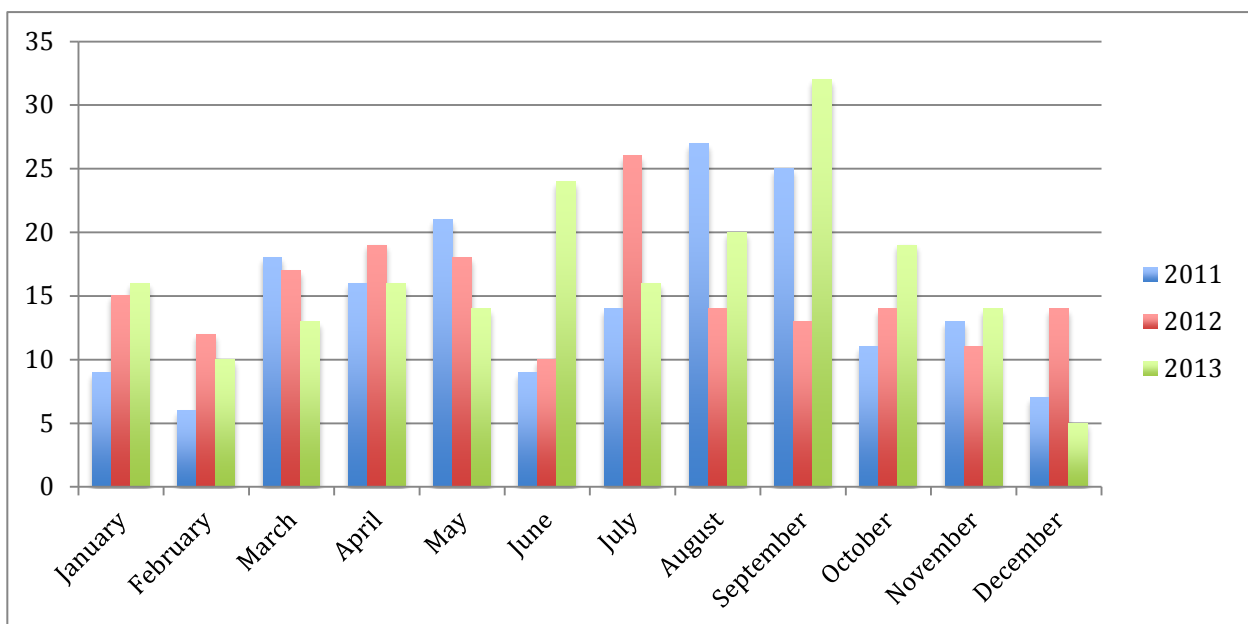
information requests in 2011 to 199 information requests in 2013. The year 2011 – 2012 saw an increase of 3.9% and 2012 – 2013 saw an additional increase of 8.7%.

There were 176 Hospital Staff requests in 2011, 31.5% of the total Hospital Staff information requests. The following years witnessed increasing numbers: 2012 had 183 requests and 2013 received 199. These increases may be partially due to the fact that a librarian joined the hospital’s Evidence Based Practice & Research Committee in 2011, thus the libraries became more visible to staff as a resource for clinical research. This librarian continued to be active in the committee through 2013, which led to presentations to other research-focused committees and departments throughout the hospital.

The data is further broken down by Month and Year in Figure 4.5. It shows the steady increase in Hospital Staff information requests over the three-year period as well as the pattern of requests submitted throughout the months.

Figure 4.5.

Hospital Staff Information Requests by Month and Year



Looking at the total picture presented in Figure 4.5, it appears the peak of the requests varied from April to September and declined in the later months of the year. In 2011, the busiest month was August with 27 requests while September (25) and May (21) were the second and third busiest. In 2012, the top three months with the most hospital staff requests were July (26), April (19) and May (18). In 2013, the months with the most requests were September (32), June (24) and August (20).

Library

The libraries received varying numbers of information requests from hospital staff (see Table 4.5). The Holman Library received the most information requests with a total of 295 requests accounting for more than half (52.9%) of the total Hospital Staff information requests. The Tower D Library was a distant second, receiving 137 requests (24.6%).

Table 4.5.

Hospital Staff Information Requests by Library

Library	Frequency	Percent	Cumulative Percent
Holman Library	295	52.9	52.9
Tower D Library	137	24.6	77.4
Einstein Library	58	10.4	87.8
Karahan Library	68	12.2	100.0
Total	558	100.0	

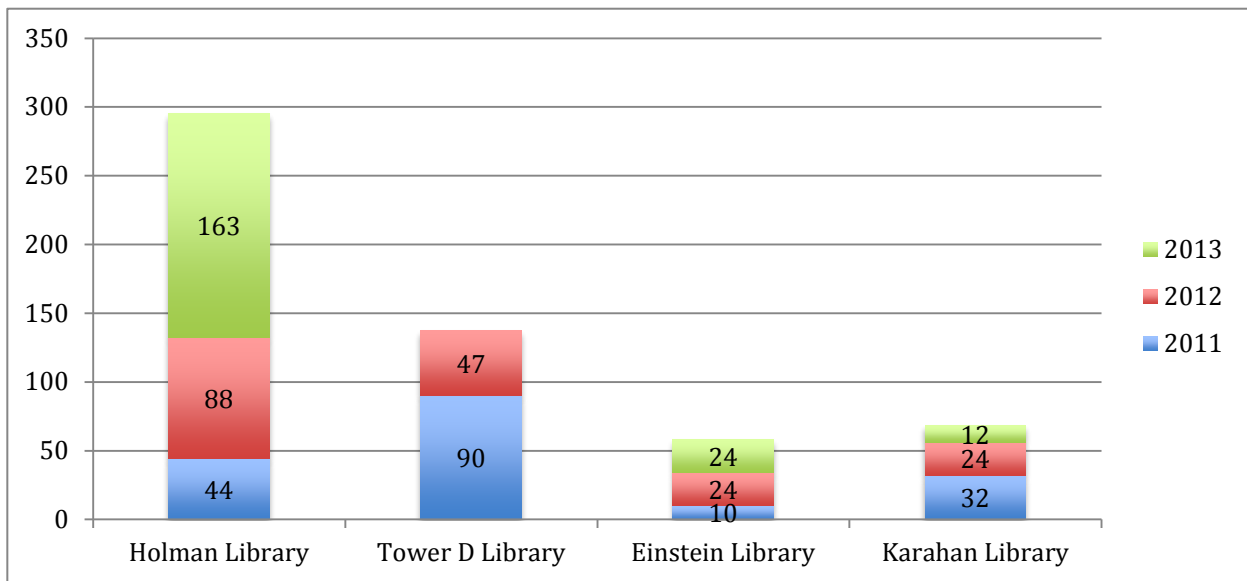
The Tower D Library permanently closed in June 2012; consequently, the data for that library is only from January 2011 through June 2012. When the Tower D Library closed in June 2012, the Tower D librarian moved permanently to the Holman Library. This resulted in two librarians working full time in the Holman Library together. Although they both assisted visitors,

having two librarians there enabled one to focus more on Hospital Staff information requests, while the other librarian focused more on services and events for the patients and patient families.

The library data on Hospital Staff information requests was further broken down by individual year and by library (see Figure 4.6). The most noticeable data in this figure is the large increase of hospital staff information requests to the Holman Library in 2013. It is obvious that once the Tower D Library closed in 2012, the Holman Library received the majority of Hospital Staff information requests. In fact, each year the number of requests to the Holman Library doubled, providing for a 270% overall increase from 2011 to 2013.

Figure 4.6.

Hospital Staff Information Requests by Library and Year



The Einstein Library more than doubled its Hospital Staff information requests from 2011 to 2012, yet remained stagnant at 24 requests in 2013. The Karahan Library is the only one that saw a decrease in hospital staff information requests.

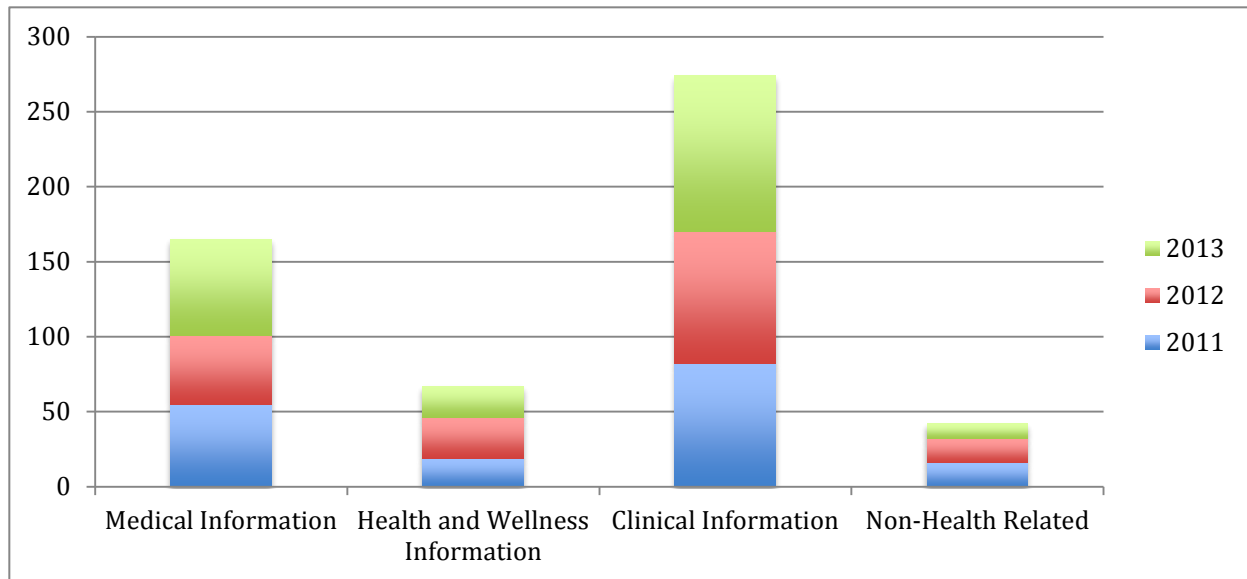
There is no certain reason for these fluctuations. It is merely speculation that it could partially be due to the library staff personal preference. For example, the primary librarian at the Holman Library was heavily involved in hospital-wide research initiatives and thus engaged in outreach to hospital staff about the library's research services. When the Tower D Library closed in June 2012, there were two librarians in the Holman Library. One preferred to promote services and events for patients and patient families, while the other dedicated more time to hospital staff research initiatives and outreach. The Einstein librarian would assist with Hospital Staff information requests when necessary, yet she preferred working with patients and patient families. The declining numbers in the Karahan Library could be due to the fact that the Karahan librarian was on leave for a number of months in 2013. Staffing levels may impact not only the overall visitor statistics but also the outreach, services and events each librarian is dedicated to.

Request Type

Information requests from hospital staff were mainly for Clinical Information. In fact, 49.1% were solely for Clinical Information, while Medical Information was the second most common type of information request with 29.5%. Figure 4.7 shows the distribution of Request Types from 2011 through 2013. There were 10 instances – 4 in 2011 and 6 in 2012 – in which no data was recorded for this variable.

Figure 4.7.

Frequency of Request Types for Hospital Staff Information Requests 2011-2013



In 2011, there were a total of 176 hospital staff information requests. Of those requests, 82 (46.5%) were for Clinical Information, 55 (31.2%) for Medical Information and only 19 (10.7%) for Health and Wellness Information. The following year saw an increase in Clinical Information requests (88 requests) and Health and Wellness Information (27). Medical Information requests decreased to 46 requests while Non-Health Related requests remained at 16. In 2013, Clinical Information saw the largest increase, jumping to 104 requests and claiming 52.2% of the total Hospital Staff information requests received. Medical Information requests also increased with 64 requests, 32.1% of the total. Health and Wellness Information and Non-Health Related information requests declined in 2013 to 21 and 10 requests, respectively.

Information requests that were categorized as Non-Health Related information included graduate programs offering specific nursing degrees, information pertaining to business operations in a hospital, yoga classes in the Dallas-Fort Worth area, driving directions, or hotel information requested on behalf of patient families.

Requests for Clinical Information were distinguished in the raw data by the fact that they dealt with medical information written on a level applicable and understandable to the clinical and medical staff, rather than the average layperson. Such requests included articles published in medical or nursing journals, information pertaining to hospital procedures, processes, as well as guidelines or best practices related to medical procedures.

It must be noted that these categorical groupings were taken from the statistics recorded by the library staff. For example, a member of the hospital staff requested information on asthma and the librarian simply recorded “asthma” in the statistics. In this study, that request was categorized under Medical Information. It is possible that the request was for clinical information related to asthma and thus would actually fall into the Clinical Information category; however, because the librarian simplified it to the primary topic “asthma,” it was counted as a Medical Information request. This is a limitation resulting from the fact that these statistics were not originally recorded for the purposes of this study and thus there was no formal oversight of the library staff training and recording of these statistics.

Requests for Specific Documents accounted for 210 (37.6%) of the 558 Hospital Staff information requests. A majority of hospital staff requests (62.4%) were not for specific documents. In other words, hospital staff were primarily looking to the libraries for more general research assistance rather than full text articles they were unable to access on their own.

Resources Used

Due to the high number of Medical Information and Clinical Information requests from hospital staff, it is not surprising to see the Internet and Subscription Databases were the most used resources (see Table 4.6). The Internet was the only resource that was used more often than it was not used, contributing to 66.5% of the total Hospital Staff information requests. Subscription Databases was the second most frequently used resource with 46.1% of the total Hospital Staff requests. In looking at the individual years, the Internet and Subscription Databases were used the most frequently. There were five cases in which the data was not recorded.

Table 4.6.

Frequency of Resources Used for Hospital Staff Information Requests

Resources Used	Yes (Percent)	No (Percent)	Not Recorded
Books	21 (3.8)	533 (95.5)	5
Brochures	29 (5.2)	525 (94.1)	5
Internet	371 (66.5)	182 (32.6)	5
Subscription Databases	257 (46.1)	296 (53.0)	5
UT Southwestern Library	189 (33.9)	364 (65.2)	5
Other	195 (34.9)	358 (64.2)	5

The Other category consisted of databases that were not a part of the CMC library or the UT Southwestern Library. Resources in this category were used in 34.9% of the requests, while UT Southwestern Library was used in 33.9%. These statistics are not surprising, for UT Southwestern Library was often consulted for specific clinical articles that were not available through the CMC library databases.

The use of both UT Southwestern Library and Other resources increased each year. From 2011 through 2013, UT Southwestern Library saw a total usage increase of 90.6% and

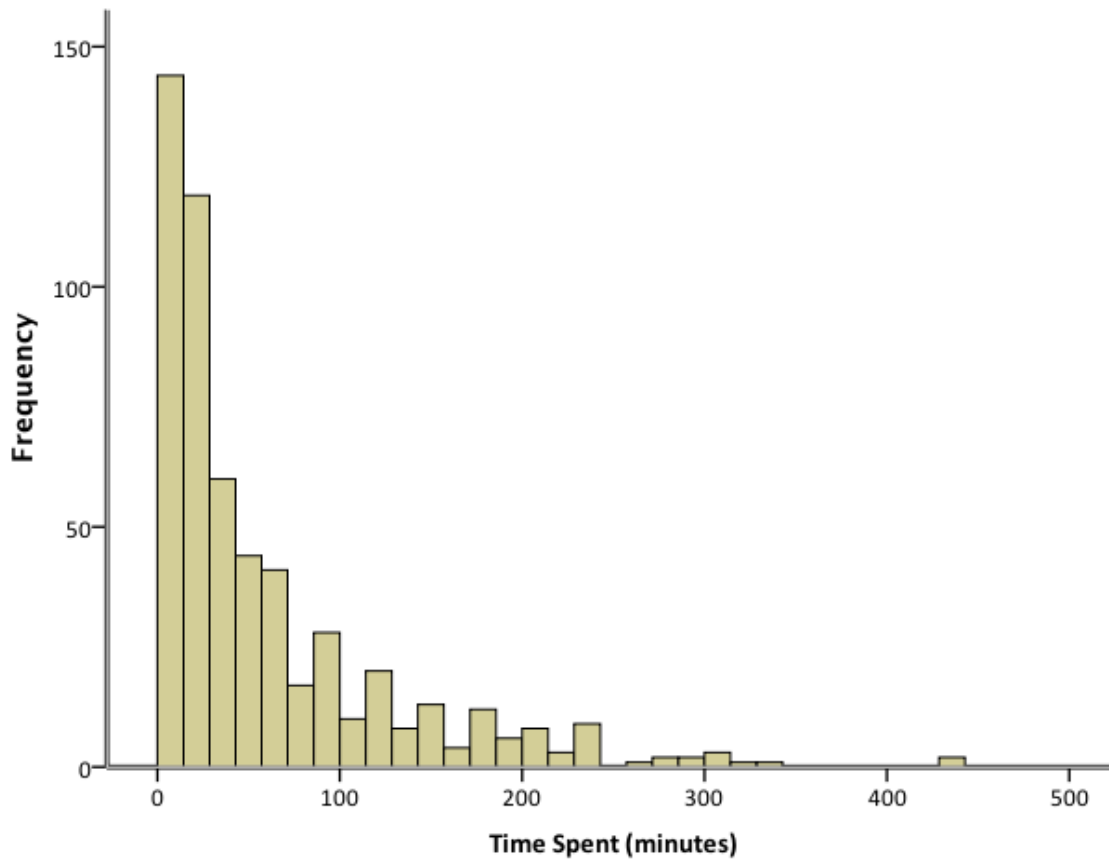
Other had a total increase of 54.7%. This is much higher than the usage of the Internet and Subscription Databases, which were consistently the resources most frequently used. However, over the three-year period, the usage of the Internet to answer Hospital Staff information requests increased only 17.5% while the usage of Subscription Databases decreased by 17.6%.

Time Spent

The Time Spent variable for Hospital Staff information requests was analyzed using frequencies and measures of central tendency. There were 558 Hospital Staff requests and no missing data. The Time Spent ranged from two minutes to 440 minutes. The SPSS-generated histogram illustrates the frequency of Time Spent on Hospital Staff requests (see Figure 4.8).

Figure 4.8.

Time Spent on Hospital Staff Information Requests



A majority (90.6%) of Hospital Staff information requests were completed within 120 minutes or two hours. Nearly 45% of the total Hospital Staff requests were completed in 20 minutes. Only 50 of the 558 Hospital Staff information requests took more than three hours to complete. This wide variance points to the variety of requests submitted. For instance, a request for a specific journal article or basic medical information would not take long, most likely falling in the 20 minutes or less segment. However, more in-depth clinical research or more difficult topics would require more time, anywhere from an hour up to the 440-minute maximum recorded.

The measures of central tendency were then calculated for the Time Spent variable. The calculations produced a mean of 58.42 ($SD = 69.031$). The median was 30, meaning the middle

score of the time spent on Hospital Staff information requests was 30 minutes. There was a mode of 10, proving that the time most frequently spent on Hospital Staff information requests was 10 minutes. With scores varying from two to 440 minutes, the range of time spent was 438. A small number of information requests that took very large amounts of time caused the mean information request time (58 minutes) to be much larger than the median (30 minutes) or the mode (10 minutes).

An independent samples t-test was used to compare the average amount of time spent on a hospital staff information request, versus a family or parent information request, by library staff. As shown in Table 4.7, the average hospital staff information request took approximately two and a half times as long as the average family information request. The difference is highly significant ($p < .0001$).

Table 4.7.

Independent Samples T-Test Comparing Time Spent by Classification

	t	df	Standard Error Difference
Time Spent	20.478	1404	2.404

Note. df = degrees of freedom

The Time Spent variable was then analyzed by library for the Hospital Staff information requests. A summary of the libraries' measures of central tendency is presented in Table 4.8.

Table 4.8.

Measures of Central Tendency for Time Spent on Hospital Staff Information Requests by Library

Library	N	M	Mdn	Mode	SD	Range
Holman Library	295	56.77	25.00	10	71.235	433
Tower D Library	137	56.09	32.00	15	66.890	437
Einstein Library	58	71.19	45.00	10	67.194	238
Karahan Library	68	59.35	30.00	5	65.273	236

Note. N = number of sample. M = mean. Mdn = median. SD = standard deviation.

The minimum and maximum time spent for each library did not vary significantly. The Holman Library had a minimum of two minutes and a maximum of 435 minutes (7 hours and 15 minutes). The Tower D Library was similar with a minimum of three minutes and a maximum of 440 minutes (7 hours and 20 minutes), the longest time spent on hospital staff information requests. The Einstein Library spent a minimum of two minutes and a maximum of 240 minutes (4 hours). The Karahan Library had very similar statistics, with a minimum of four minutes and a maximum of 240 minutes (4 hours).

Department

Three variables were analyzed for Hospital Staff information requests that were not available for Patient Family information requests: Department, Job Title and Reason for Request. The results of those analyses are discussed below.

The libraries served a total of 98 Departments within the hospital between 2011 and 2013. There were 81 cases out of the total 558 Hospital Staff information requests in which the Department was not recorded, which totaled to 14.5% of the variable's data. Table 4.9 lists the 10 departments that submitted the most Hospital Staff information requests.

Table 4.9.

Top 10 Departments that Submitted Hospital Staff Information Requests

Department	Number of Requests	Percent
1. Library and School Services	47	8.4
2. Physical Medicine and Rehab (PM&R)	35	6.3
3. Respiratory Care Services	27	4.8
4. Advanced Practice Administration	23	4.1
5. Surgery	17	3.0

6. Nursing	15	2.7
7. PeriAnesthesia	15	2.7
8. Trauma Services	13	2.3
9. Disease Management	12	2.2
10. Surgical Services	12	2.2

The department from which the most Hospital Staff information requests were received was the libraries' own department, Library and School Services. However, it must be clarified that the requests were not from the librarians themselves; rather, 33 of the 47 requests were submitted by the teachers in School Services. The director and manager of the Library and School Services department also submitted requests for information to the libraries.

The Physical Medicine and Rehab (PM&R) department had the second most information requests, a total of 35 or 6.3% of total Hospital Staff information requests. In 2012, a librarian and a PM&R doctor worked together to create packets of consumer health information on brain injury and brain trauma in youth sports. The librarian organized this information into individual packets for distribution to patient families as requested by the doctor. Although it is not clear exactly how many of the requests from PM&R are for this particular information, the data shows that eight of their 35 requests were on behalf of patient families.

Overall, the libraries served a wide variety of Departments, from clinical research and education to surgery and medical practice, from specialty care services to departments focused on emotional, mental and spiritual care.

Job Title

The second variable analyzed specifically for Hospital Staff information requests was the requestor's Job Title. The libraries served a total of 73 unique Job Titles; however, of the 558

Hospital Staff information requests, there were 78 instances (13.9%) in which the Job Title was not recorded. Table 4.10 shows the 10 Job Titles that submitted the most information requests.

Table 4.10.

Top 10 Job Titles that Submitted Hospital Staff Information Requests

Job title	Number of Requests	Percent
1. Advanced Practice Nurse (APN)	64	11.5
2. Registered Nurse (RN)	45	8.1
3. Teacher	33	5.9
4. Clinical Nurse Specialist (CNS)	28	5.0
5. Manager	28	5.0
6. Medical Doctor (MD)	26	4.7
7. Director	23	4.1
8. Clinical Research Coordinator	18	3.2
9. Clinical Educator	16	2.9
10. Nurse Practitioner (NP)	16	2.9

Nurses account for four of the top 10 job titles that requested information from the libraries. Advanced Practice Nurse (APN) was the title that submitted the most requests, totaling 64 requests or 11.5% of total hospital staff information requests. Registered Nurse (RN) was second with 45 requests, while Clinical Nurse Specialist (CNS) was fourth with 28 requests and Nurse Practitioner (NP) was tenth with 16 requests. In the complete listing of job titles that requested information, there were 13 different nursing job titles totaling 187 requests, which is 33.5% of total Hospital Staff information requests. This does not account for any nurses with job titles not directly naming nursing, such as Team Leader, Manager, or Director.

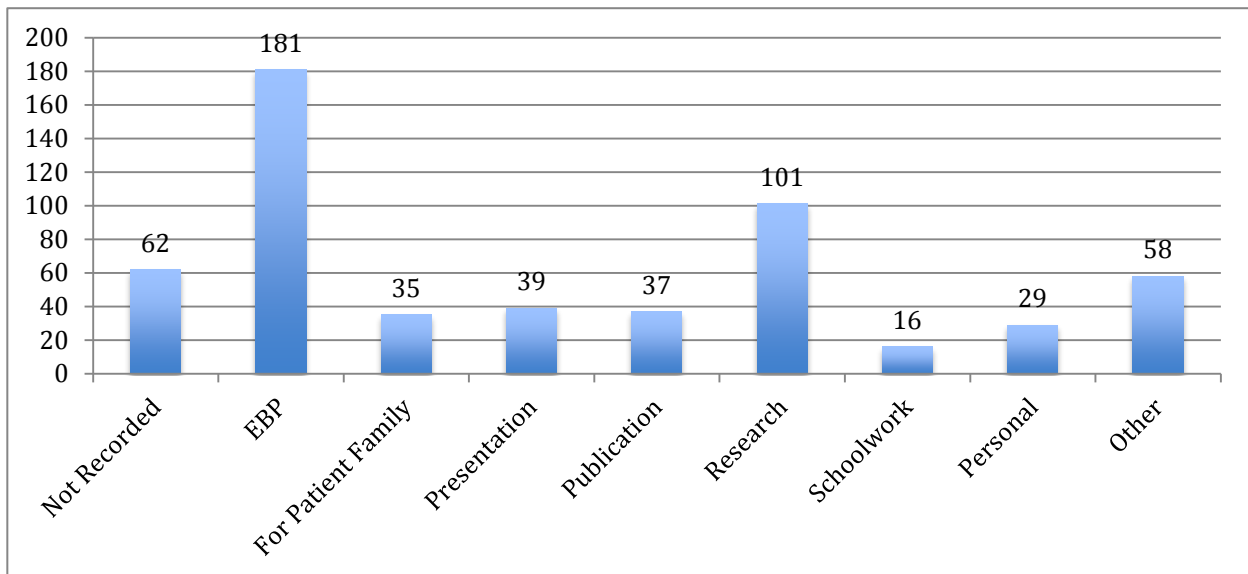
Just as there were a variety of Departments, the libraries also served a variety of Job Titles. They range from 13 different nursing titles to chaplains, from executive staff to janitors.

Reason for Request

The third variable available uniquely for Hospital Staff information requests was the Reason for Request. Figure 4.9 illustrates the reasons and their frequencies. There were eight categories: Evidence-Based Practice (EBP), For Patient Family, Presentation, Publication, Research, Schoolwork, Personal Use, and Other. There were 62 cases of data not recorded for this variable, which is also illustrated in the figure below.

Figure 4.9.

Frequency of Reasons for Hospital Staff Information Requests



A majority of Hospital Staff information requests were for EBP purposes, with a total of 181 requests (32.4%) in this category. The second most frequent reason was Research. It is a very general category, under which 101 of the requests (18.1%) fall. Personal Use (5.2%) and Schoolwork (2.9%) were the least frequently used reasons. The fact that a majority (50.5%) of the reasons for their requests were EBP and Research shows that hospital staff was turning to the library for assistance with research that most likely directly impacted their work at the hospital.

Although the EBP category was not further specified in the statistics, it often consisted of requests for information directly related to best practices, the development of policies and procedures, or the reasoning behind existing policies and procedures. The Research category was recorded when the requestor would simply say that the information was for research they were doing. The Other category is also not clarified in the statistics, thus it is not clear what types of requests fall into the category. It is possible that this category was marked when the librarian failed to ask the reason for the request or when the reason provided was for publication, presentation or personal use, yet the library staff did not clarify those particular reasons. Instead, they simply marked "other." Again, this is a limitation brought on by the fact that these statistics were not originally recorded for the purposes of this study.

Discussion of Findings for Research Question 2

To what extent has hospital staff used the libraries to meet their information needs? From 2011 through 2013, the libraries received a total of 10,473 visits from hospital staff. Of those visits, 558 (5.32%) were requests for information. In fact, despite the increase of Hospital Staff information requests over the three-year period, the percentage of Hospital Staff information requests to total hospital staff library visits stays around 5% each year. In 2011, there was a total of 3,419 hospital staff visits of which 176 (5.14%) were information requests. The following year the total visits decreased to 3,188 while the information requests increased to 183, yet it was still only 5.74% of total hospital staff visits. In 2013, there were 3,866 hospital staff library visits and 199 (5.14%) were information requests.

The other services offered by the libraries, such as leisure reading materials and general Internet access, were also available for the use of hospital staff. Yet when they did request information from the libraries, it was most often for Medical Information or Clinical Information, most likely pertaining to EBP or Research purposes. To fulfill these requests, information was gathered using the Internet, the library's Subscription Databases, UT Southwestern Library as well as Other resources outside of the libraries' own resources. Although many of the Hospital Staff information requests took longer to fulfill than the Patient Family information requests, there was an average of only 30 minutes.

Considering the fact that the CMC libraries were originally established solely for the use of patients and patient families, it is interesting to see that those policies changed over the years with the increase of Hospital Staff information requests. On the other hand, given that there is no other type of library in the CMC system and considering that CMC's goal is to create a stronger academic environment, it is curious to see so few requests for information from the hospital staff.

4.3 Research Question 3

Chi-square analysis was used to explore the relationships between certain variables in the third research question: What is the relationship between Classification (Patient Family, Hospital Staff) and two descriptors of information needs (Request Type and Resources Used)? First, chi-square tests for independence were run with the Classification variables as the independent variables and Request Type and Resources Used as the dependent variables. Next,

crosstabulations were run by individual year to further analyze the Classification variables and the Request Type and Resources Used variables.

Chi-Square Test for Independence

Chi-square tests for independence were run with a significance level of $p < .05$. If $p > .05$, it was concluded that there is no relationship between the variable and the Classification variable. If $p < .05$, it was concluded that there is a relationship between the variable (Request Type or Resources Used) and the Classification variable. If there is a relationship, *phi* and Cramer's V were used to identify the strength of the relationship. The data marked "not recorded" was not included in the chi-square analyses; however, the data are listed in the frequency tables to ensure the total sample sizes are accurate.

The Request Type variable was analyzed first. The crosstabulations illustrate that Patient Family information requests and Hospital Staff information requests differed greatly in Request Type (see Table 4.11). Of the total 1406 information requests, 49.9% requested Medical Information while 20.2% requested Health and Wellness Information and 19.7% were requests for Clinical Information. Only 9.5% requested Non-Health Related information. When information was requested, regardless of Classification, it was most likely for Medical Information. More specifically, when Patient Families requested information, it was primarily for Medical Information (63.2%), while Hospital Staff information requests were usually for Clinical Information (49.1%).

Table 4.11.

Frequency of Request Types by Classification

Classification	Request Type					Total
	Medical Information	Health and Wellness Information	Clinical Information	Non-Health Related	Not Recorded	
Patient Family	536	217	3	92	0	848
Hospital Staff	165	67	274	42	10	558
Total	701	284	277	134	10	1406

The chi-square tests further support that the Patient Family information requests and the Hospital Staff information requests differed significantly in the type of information that was requested, $X^2(3, N = 1396) = 518.853, p < .001$ (with Cramer's $V = .610; p < .001$). There is a strong relationship between the Classification and Request Type variables; more specifically, patient families and hospital staff requested very different types of information.

The Resources Used variable was also analyzed using chi-square tests. There are six types of resources: Books, Brochures, Internet, Subscription Databases, UT Southwestern Library, and Other. Table 4.12 presents the usage frequency of each resource. The resources were analyzed individually with the classification variable in chi-square tests. There were six cases of data not being recorded, thus $N = 1400$ in the chi-square analysis instead of the complete sample of 1406.

Table 4.12.

Frequency of Resources Used by Classification

Classification	Books	Brochures	Internet	Subscription Databases	UT Southwestern Library	Other
Patient Family						
Yes	127	290	636	47	5	40
No	719	556	210	799	841	806
Hospital Staff						
Yes	21	29	371	257	189	195
No	532	524	182	296	364	358
Total						

Yes	148	319	1007	304	194	235
No	1251	1080	392	1095	1205	1164

Books were consulted in 15% of Patient Family information requests, while they were used even less so (3.8%) in Hospital Staff information requests. This difference is significant enough to be noteworthy, $\chi^2(1, N = 1400) = 44.588, p < .001, \phi = .178$. There is a weak relationship between Classification and the use of Books. In other words, Books were not used significantly more often for one Classification group than the other.

Brochures were used in 34.3% of the total Patient Family requests. It was a resource less frequently used in Hospital Staff information requests (5.2%). Again, this shows that the difference between Classification and the usage of Brochures was a great one, $\chi^2(1, N = 1400) = 160.514, p < .001, \phi = .339$. There is a moderate relationship. Patient Family information requests involved Brochures more often than Hospital Staff information requests.

The Internet was the resource used most frequently for both Classifications. In Patient Family information requests, it was used 75.2% of the time. In Hospital Staff information requests, it was used 67.1% of the time. There is a difference, $\chi^2(1, N = 1400) = 10.706, p = .001, \phi = .087$. The relationship is a negligible one. While the usage percentages do show a difference in the use of the Internet, the analysis shows that the difference is not a large one. The Internet was used frequently for both Classifications of information requests, thus there is a negligible relationship between Classification and Internet.

For Patient Family information requests, Subscription Databases were consulted only 5.6% of the time. However, they were used in 46.6% of Hospital Staff information requests. This illustrates a great difference between the use of the resource and Classification, $\chi^2(1, N = 1400)$

= 330.504, $p < .001$, $\phi = .486$. There is a relationship between Classification and the use of Subscription Databases. The analysis reveals a relatively strong association. Hospital Staff information requests used Subscription Databases significantly more than the Patient Family information requests.

UT Southwestern Library was used infrequently for Patient Family information requests (0.6%), yet its usage was much higher for Hospital Staff information requests (34.3%). Again, there was a significant difference in the use of UT Southwestern Library for the two Classification groups, $X^2(1, N = 1400) = 317.231$, $p < .001$, $\phi = .476$. There is a relatively strong relationship between Classification and the use of UT Southwestern Library. Hospital Staff information requests used UT Southwestern Library much more so than Patient Family information requests.

Resources that fell into the Other category were employed in 4.7% of Patient Family information requests and 35.4% of Hospital Staff information requests. This illustrates that the Classification groups differed in the use of Other resources, $X^2(1, N = 1400) = 224.404$, $p < .001$, $\phi = .400$. There is a relatively strong relationship between Classification and the use of Other resources, for Hospital Staff information requests used resources in the Other category more frequently than Patient Family information requests.

There is a relationship between the Classification and the type of resource used in each of the resources, whether it is Books, Brochures, Internet, Subscription Databases, UT Southwestern Library, or Other. The Patient Family information requests and the Hospital Staff information requests consistently differed significantly in the resources that were used to fulfill their information needs.

2011 Crosstabulations

In 2011, there were a total of 577 information requests, 401 from patient families and 176 from hospital staff. Table 4.13 illustrates the 2011 information requests by Request Type. Medical Information was the most common request type in 2011, with 51.2% of the requests, followed by Health and Wellness Information (22.0%), Clinical Information (14.5%), and Non-Health Related information (11.4%).

Of the 401 Patient Family requests, 60.0% were for Medical Information, 26.9% for Health and Wellness Information, 12.4% for Non-Health Related information and only 0.4% for Clinical Information. Hospital staff requested primarily Clinical Information, as 82 requests (46.5%), followed by Medical Information (31.2%), Health and Wellness Information (10.7%) and Non-Health Related information (9.0%). There were four pieces of missing data for request type, thus the chi-square analysis was run with N = 573.

Table 4.13.

Frequency of Request Types by Classification in 2011

Classification	Request Type					Total
	Medical Information	Health and Wellness Information	Clinical Information	Non-Health Related	Not Recorded	
Patient Family	241	108	2	50	0	401
Hospital Staff	55	19	82	16	4	176
Total	296	127	84	66	4	577

Chi-square analysis was run on the individual year data to see if there was a relationship between the variables year to year. For 2011, like the total data, there was a relationship between Request Type and Classification, $X^2(3, N = 573) = 214.921, p < .001$ (with Cramer's V =

.614; $p < .001$). Cramer's V shows a strong relationship, the types of information requested by patient families and hospital staff differed significantly.

The 2011 data was also analyzed by Resources Used (see Table 4.14). In total, the Internet was the only resource used in more requests than not. It was used in 72.9% of the information requests, while Brochures and Subscription Databases were a far second and third place, used in 23.0% and 22.6% of total information requests, respectively. The Internet also played a significant role in Patient Family information requests, for it was used in 76.3% of their requests, followed by Brochures (32.3%) and Books (15.3%). For Hospital Staff information requests, the Internet was used in 65.1% of requests, followed by Subscription Databases (58.3%) and Other (30.3%). There were two cases of data not recorded, thus the chi-square analysis was run with $N = 575$.

Table 4.14.

Frequency of Resources Used by Classification in 2011

Classification	Books	Brochures	Internet	Subscription Databases	UT	
					Southwestern Library	Other
Patient Family						
Yes	61	129	305	28	2	21
No	339	271	95	372	398	379
Hospital Staff						
Yes	8	3	114	102	40	53
No	167	172	61	73	135	122
Total						
Yes	69	132	419	130	42	74
No	506	443	156	445	533	501

For Books, there was little difference between the Classifications and its usage, $X^2(1, N = 575) = 13.146, p < .001, \phi = .151$. The analysis shows a weak association. Books were used in a similar frequency for both Patient Family and Hospital Staff information requests.

The use of Brochures differed slightly more for the Classification variable, $X^2(1, N = 575) = 64.181, p < .001, \phi = .334$. The analysis shows a moderate association. Brochures were used more often in Patient Family information requests than in Hospital Staff information requests.

The Internet was used frequently for both Classifications, for the analysis shows a significant yet weak relationship, $X^2(1, N = 575) = 7.597, p = .006, \phi = .115$. In other words, there was not a great difference in the use of the Internet for Patient Family and Hospital Staff information requests.

The use of Subscription Databases differed between the two Classifications of information requests, $X^2(1, N = 575) = 183.002, p < .001, \phi = .564$. There is a relatively strong relationship. Hospital Staff information requests used Subscription Databases much more frequently than Patient Family information requests.

UT Southwestern Library and the Classification variable do have a relationship, $X^2(1, N = 575) = 89.871, p < .001, \phi = .395$. The analysis specifies a relationship of moderate strength. Hospital Staff information requests used UT Southwestern Library much more frequently than Patient Family information requests.

The Other category also has a significant relationship with the Classification variable, $X^2(1, N = 575) = 68.048, p < .001, \phi = .344$. The analysis shows a relationship of moderate strength. Examination of the crosstabulations revealed that the Other resource was more frequently used for Hospital Staff information requests.

In 2011, 69.4% of the information requests were from patient families. This large majority is reflected in the fact that Internet and Brochures were the top two resources used

overall. As the requests numbers changed for patient families and hospital staff in 2012 and 2013, these Resources Used data also changed.

2012 Crosstabulations

In 2012 there was a total of 446 requests, 263 from patient families and 183 from hospital staff (see Table 4.15). In comparison to 2011, this is a decrease of 22.7% in total information requests. Patient Family information requests decreased 34.4%, while Hospital Staff information requests increased by 3.9%.

Medical Information took the majority of total information requests (46.6%). Health and Wellness Information was the second (22.6%), followed by Clinical Information (19.7%) and Non-Health Related information (9.6%). Patient Family information requests followed a similar pattern with Medical Information being the most requested (61.5%) and Health and Wellness Information (28.1%) the second most requested type. Hospital Staff information requests were dominated by Clinical Information (48.0%) and Medical Information (25.1%). Six pieces of data were missing for the Request Types, thus N = 440 in the chi-square analysis.

Table 4.15.

Frequency of Request Types by Classification in 2012

Classification	Request Type					Total
	Medical Information	Health and Wellness Information	Clinical Information	Non-Health Related	Not Recorded	
Patient Family	162	74	0	27	0	263
Hospital Staff	46	27	88	16	6	183
Total	208	101	88	43	6	446

The chi-square tests show a significant difference in the Request Type and the Classification variable, $\chi^2(3, N = 440) = 166.946, p < .001$ (with Cramer's $V = .616; p < .001$). The Cramer's V signifies that it is a strong association. Patient Family information requests and Hospital Staff information requests requested very different types of information. Patient families most often requested Medical Information, while hospital staff most often requested Clinical Information.

In analyzing Resources Used in the 2012 information requests, the Internet again was the most frequently used at 73.5% (see Table 4.16). Brochures (22.4%) were second, followed by Subscription Databases (19.2%), Other (16.3%), UT Southwestern Library (15.6%), and Books (8.8%). The frequency pattern for Patient Family information requests was the same for 2012 as it was for 2011. The Internet (77.1%) was used most frequently for patient family requests, followed by Brochures (32.8%) and Books (12.6%). A majority of Hospital Staff information requests involved the Internet (68.3%), followed by Subscription Databases (39.4%), UT Southwestern Library (37.2%), and Other (33.3%). For the Resources Used variable, four pieces of data were not recorded, thus $N = 442$.

Table 4.16.

Frequency of Resources Used by Classification in 2012

Classification	Books	Brochures	Internet	Subscription Databases	UT Southwestern Library	Other
Patient Family						
Yes	33	86	202	14	2	12
No	229	176	60	248	260	250
Hospital Staff						
Yes	6	13	123	71	67	60
No	174	167	57	109	113	120
Total						
Yes	39	99	325	85	69	72

No	403	343	117	357	373	370
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There was not a significant difference in the use of Books for between the two Classification groups, $X^2(1, N = 442) = 11.377, p = .001, \phi = .160$. The analysis shows a weak association. Although the use of Books did not vary greatly between the Classification groups, the crosstabulation data shows that Books were used more frequently in Patient Family information requests.

Brochures were used slightly differently in response to the different Classifications of information requests, $X^2(1, N = 442) = 40.237, p < .001, \phi = .302$. The analysis shows a moderate association. Patient Family information requests used Brochures more frequently than Hospital Staff information requests.

There was not a significant difference in the use of the Internet between Patient Family and Hospital Staff information requests, $X^2(1, N = 442) = 4.212, p = .040, \phi = .098$. The analysis shows a weak association. For both Classification groups, the Internet was the most frequently used resource.

The two Classification groups differed more in the use of Subscription Databases, $X^2(1, N = 442) = 79.881, p < .001, \phi = .425$. The analysis shows a relatively strong relationship. Crosstabulation analysis shows that Subscription Databases were used more frequently in Hospital Staff information requests.

UT Southwestern Library also has a relationship with the Classification variable, $X^2(1, N = 442) = 107.658, p < .001, \phi = .494$. The analysis specifies a relatively strong association. Crosstabulation data shows that the UT Southwestern Library was used more frequently for Hospital Staff information requests.

The Other category was used differently among the Classification groups, $\chi^2(1, N = 442) = 64.689, p < .001, \phi = .383$. This shows a moderate relationship. Hospital Staff information requests used this resource more often than Patient Family information requests.

The 34.4% decrease in Patient Family requests and the slight 3.9% increase in Hospital Staff requests from 2011 to 2012 are reflected in the fact that UT Southwestern Library was used more frequently than Books in total information requests.

2013 Crosstabulations

In 2013 there were a total of 383 requests, 184 from patient families and 199 from hospital staff. This is the first year that the number of Hospital Staff requests surpassed that of Patient Family requests. In comparison to 2012 numbers, there was a 14.1% decrease in total information requests. Patient Family requests decreased by 30.0%, while requests from Hospital Staff increased by 8.7%.

As shown in Table 4.17, in 2013 a majority of the information requests were for Medical Information (51.4%), while 27.4% were for Clinical Information. Health and Wellness Information was a distant third (14.6%) while Non-Health Related information was the least requested at 6.5%. Patient families requested primarily Medical Information (72.2%) while the majority of Hospital Staff information requests were for Clinical Information (52.2%).

Table 4.17.

Frequency of Request Types by Classification in 2013

Classification	Request Type				Not Recorded	Total
	Medical Information	Health and Wellness Information	Clinical Information	Non-Health Related		

Patient Family	133	35	1	15	0	184
Hospital Staff	64	21	104	10	0	199
Total	197	56	105	25	0	383

The chi-square analysis again shows a strong relationship between the Request Type and the Classification variable, $\chi^2(3, N = 383) = 129.316, p < .001$ (with Cramer's $V = .581; p < .001$). Cramer's V specifies a relatively strong association, meaning that the Classification groups differed greatly in the type of information they requested.

The analysis of Resources Used in 2013 total information requests shows the Internet still in the majority with 68.9%, followed by Subscription Databases and Other tied at 23.5% (Table 4.18). Brochures (23.0%), UT Southwestern Library (21.9%) and Books (10.4%) rounded out the bottom three. Patient Family information requests saw similar patterns as in previous years, with Internet (70.1%) as the most frequently used resource followed by Brochures (40.8%) and Books (17.9%). Hospital Staff information requests primarily involved the Internet (67.8%) and Subscription Databases (42.7%), while UT Southwestern Library and Other were tied at 41.7%.

Table 4.18.

Frequency of Resources Used by Classification in 2013

Classification	Books	Brochures	Internet	Subscription Databases	UT	
					Southwestern Library	Other
Patient Family						
Yes	33	75	129	5	1	7
No	151	109	55	179	183	177
Hospital Staff						
Yes	7	13	134	84	82	82
No	191	185	64	114	116	116
Total						
Yes	40	88	263	89	83	89
No	342	294	119	293	299	293

Books were not used in a significantly different way for the Classification groups, $X^2(1, N = 383) = 21.246, p < .001, \phi = .236$. There is a relationship, but it is a moderate relationship. Crosstabulation analysis shows that Books were used more frequently in Patient Family information requests.

The information requests differed more with the use of Brochures, $X^2(1, N = 383) = 63.290, p < .001, \phi = .407$. The analysis shows a relatively strong relationship. Patient Family information requests used Brochures significantly more often than Hospital Staff information requests.

Although the Internet is the most frequently used resource, its use did not differ significantly among the two groups, $X^2(1, N = 383) = .230, p = .632$. This is a negligible and non-significant association between the variables. Although the Classification groups differ greatly in their use of the Internet, it was the most frequently used resources for both Patient Family information requests and Hospital Staff information requests.

Subscription Databases varied slightly more in its use for the information requests, $X^2(1, N = 383) = 85.074, p < .001, \phi = .471$. The analysis shows a relatively strong relationship. Hospital Staff information requests used Subscription Databases much more often than Patient Family information requests.

UT Southwestern Library experienced the most significant difference of usage between the two Classification groups, $X^2(1, N = 383) = 94.619, p < .001, \phi = .497$. This is a relatively strong association. The crosstabulation data shows that the UT Southwestern Library was used most often for Hospital Staff information requests.

The Other category also differed between Patient Family and Hospital Staff information requests, $\chi^2(1, N = 383) = 76.407, p < .001, \phi = .447$. The analysis shows a relatively strong relationship. Hospital Staff information requests used the Other category of resources much more often than the Patient Family information requests.

The fact that 2013 was the first year Hospital Staff requests surpassed Patient Family requests is seen in rankings of Subscription Databases and Other as being tied for the second most used resources in total information requests. Brochures had come in at the second place for the previous two years, but were knocked down to fourth in 2013. From 2011 to 2013, there was a 33.6% decrease in total information requests, a 54.1% decrease in Patient Family requests, and a 13.0% increase in Hospital Staff requests.

Discussion of Findings for Research Question 3

What is the relationship between Classification (Patient Family, Hospital Staff) and two descriptors of information needs (Request Type, Resources Used)? The chi-square analyses show that there is a significant difference between Patient Family and Hospital Staff information requests for both Request Type and Resources Used. The crosstabulation data further illustrates that patient families were most likely to request Medical Information and that those requests were most frequently fulfilled using the Internet, Brochures, and Books. Hospital staff, on the other hand, usually requested Clinical Information and the most frequently used resources were the Internet, Subscription Databases, and Other.

The crosstabulations by year shows that although the number of Patient Family information requests declined over the three-year period, the information needs did not

drastically change. The most frequently requested types stayed the same as did the most frequently used resources. The chi-square analysis by year shows that neither the request type nor the usage of individual resources for each group of information requests altered significantly over the years. Thus, it can be said that the information needs of the two groups did not change from 2011 through 2013. Patient families and hospital staff requested the same type of information and the same resources were used to fulfill those requests. Instead, it was the number of requests that changed.

The chi-square analysis by year shows a variety of strengths of relationships between Classification and Request Type and Resources Used. Request Type held on to a strong relationship, but in 2013 it slipped down to relatively strong. The years 2011 and 2012 had quite similar relationships among the six resources used; yet in 2013 they either weakened or strengthened. Books, Brochures, and Other all strengthened, while the Internet weakened. Subscription Databases was the only resource that held on to a relatively strong relationship each year, while UT Southwestern Library tottered between moderate and relatively strong. In only one instance (the Internet in 2013) was the relationship not significant at the $p < .05$ level.

It is concluded there are significant relationships between the Classification and the Request Type and Resources Used variables at the $p < .05$ level. The strength of relationships between the variables varied, but those relationship strengths did not change drastically from year to year. The type of Classification consistently had a significant impact on what type of information was requested and what resources were used to fulfill that information request.

4.3.1 Research Sub-Question 3A

The following four research sub-questions (3A – 3D) address the relationship between the Classification variable and the Request Type and Resources Used variables, as they pertain to each library. First, the Krissi Holman Library. The research question asked: What is the relationship between Classification (Patient Family, Hospital Staff) and two descriptors of information needs (Request Type, Resources Used) as requested in the Krissi Holman Library? Similar to the third research question, chi-square tests for independence and crosstabulations were employed to identify if there is a relationship and, if so, the strength of that relationship.

The chi-square tests for independence were run with a significance level of $p < .05$. If $p > .05$, it was concluded that there is no relationship between the variable and the classification variable. If $p < .05$, it was concluded that there is a relationship between the variable (Request Type or Resources Used) and the Classification variable. If there is a relationship, *phi* and Cramer's V were used to identify the strength of the relationship. The data marked "not recorded" was not included in the chi-square analyses; however, the data are listed in the frequency tables to ensure the total sample sizes are accurate.

The Holman Library received a total of 419 information requests between 2011 and 2013. Of those requests, 29.6% were from patient families and 70.4% were from hospital staff. When considering the type of information requested, Medical Information and Clinical Information were by far the most requested, accounting for 42.5% and 37.0% of the total requests, respectively (see Table 4.19). Within the Classifications, patient families primarily requested Medical Information (72.6%) and Non-Health Related information (15.3%) while hospital staff overwhelmingly requested Clinical Information (52.5%) and Medical Information (29.8%).

Table 4.19.

Frequency of Request Types at the Holman Library

Classification	Request Type					Total
	Medical Information	Health and Wellness Information	Clinical Information	Non-Health Related	Not Recorded	
Patient Family	90	15	0	29	0	124
Hospital Staff	88	30	155	22	0	295
Total	178	45	155	41	0	419

The chi-square analysis also shows the great difference in Request Type between the Classification variables, $X^2(3, N = 419) = 108.531, p < .001$ (with Cramer's $V = .509; p < .001$). The Cramer's V shows a moderate association. In other words, there is a relationship and it is a relatively strong one. Patient Family information requests and Hospital Staff information requests were very different in the types of information requested.

The Resources Used variable was analyzed for each of the six resources. Table 4.20 presents the frequency of the resources used for Patient Family information requests, Hospital Staff information requests and total information requests. There were two cases of data not being recorded, thus $N = 417$ in the chi-square analyses.

Table 4.20.

Frequency of Resources Used at the Holman Library

Classification	Books	Brochures	Internet	Subscription Databases	UT	
					Southwestern Library	Other
Patient Family						
Yes	46	23	102	7	0	4
No	77	100	21	116	123	119
Hospital Staff						
Yes	10	13	186	137	107	135
No	283	280	107	156	186	158
Total						

Yes	56	36	288	144	107	139
No	360	380	128	272	309	277

Books were used most frequently in Patient Family information requests (37.4%), yet they were used in only 3.4% of Hospital Staff information requests. Chi-square analysis shows that there was a significant difference between the Classification variables' use of books, $X^2(1, N = 417) = 86.213, p < .001, \phi = .455$. This tells of a relatively strong association. The crosstabulation data shows that Books were used significantly more frequently in Patient Family information requests.

Brochures were used in only 8.6% of total information requests. Patient Family information requests used Brochures in 18.7% of their requests, while they were used in only 4.4% of Hospital Staff information requests. The difference is great enough to be significant at the $p < .05$ level, $X^2(1, N = 417) = 22.411, p < .001, \phi = .232$. The analysis shows a moderate relationship. Patient Family information requests used Brochures much more often than Hospital Staff information requests.

The Internet was used frequently for both Classification groups: 82.9% of Patient Family information requests and 63.6% of Hospital Staff information requests. That difference is significant enough to be noteworthy at the $p < .05$ level, $X^2(1, N = 417) = 15.218, p < .001, \phi = .191$. The analysis shows a weak relationship. Although there was not a great difference in the frequency of Internet use between the two Classification groups, it was the resource that was used most frequently for both Patient Family and Hospital Staff information requests.

Subscription Databases were used in 46.9% of Hospital Staff information requests while used in only 5.7% of Patient Family information requests. These groups undoubtedly differed

significantly in the use of Subscription Databases, $X^2(1, N = 417) = 65.051, p < .001, \phi = .395$.

There is a moderate association between the two variables. Examination of the crosstabulation data shows that Subscription Databases were used more frequently in Hospital Staff information requests.

UT Southwestern Library was a resource that was never used for Patient Family information requests in the Holman Library. For Hospital Staff information requests, it was consulted in 36.7% of requests. This is a significant difference between the Classification groups, $X^2(1, N = 417) = 60.976, p < .001, \phi = .382$. This shows only a moderate relationship. Hospital Staff information requests employed the use of the UT Southwestern Library much more often than Patient Family information requests.

The Other category also saw a large difference of usage between the Classification groups. For it was used in 3.3% of Patient Family requests and 46.3% of Hospital Staff requests. Again, this is a significant difference, $X^2(1, N = 417) = 71.920, p < .001, \phi = .415$. There is a relatively strong association. Hospital Staff information requests used this type of resource much more frequently than Patient Family information requests.

Discussion of Findings for Research Sub-Question 3A

Of the total 22,982 visits to Holman Library from 2011 through 2013, only 419 (1.8%) were information requests. When visits by neither hospital staff nor patient family are not included – such as tours and patients – the total is 15,437. Information requests account for only 2.7% of total patient family and hospital staff library visits. It must be noted that the

number of visits to the Holman Library more than doubled after the closing of the Tower D Library. In 2011, the Holman Library had 4,936 visits; in 2013, there were 9,949 visits.

Of the 419 information requests submitted to the Holman Library, 124 (29.5%) were for patient families and 295 (70.4%) were for hospital staff. Due to the small percentage of information requests versus the total visits, a large majority of visitors used the Holman Library without requesting information from the library staff. Questions about books, book recommendations, using the Internet, and other similar requests for assistance were not recorded as information requests.

As seen in the data for the total libraries, patient families primarily requested Medical Information while hospital staff typically requested Clinical Information. This was also true with the Holman Library data. The top three resources used in Holman Library, regardless of classification, were the Internet (69.3%), Subscription Databases (34.8%) and Other (33.6%). These were the same top resources used in Hospital Staff information requests, while the Internet, Books, and Brochures were most frequently used for Patient Family requests in the Holman Library.

The primary librarian at the Holman Library was active in hospital-wide research initiatives and committees; thus, it is not surprising to see more Hospital Staff information requests than Patient Family information requests. However, given that the Holman Library is the only library in the main hospital after the Tower D Library closed in June 2012, it is somewhat surprising that there is not a greater number of Patient Family information requests.

What is the relationship between the Classification variable and Request Type and Resources Used as requested in the Holman Library? There is a relatively strong relationship

between Classification and Request Type. The Classification group did have a significant impact on the type of information requested. The Resources Used variable was analyzed by individual resource, and thus there were relationships of varying strengths between the Classification variable and the six resources. Three of the six resources had a moderate association with Classification: Brochures, Subscription Databases and UT Southwestern Library. Books and Other had a relatively strong relationship while the Internet had a weak relationship.

In conclusion, Classification and Request Type had a relatively strong relationship while the relationship between Classification and Resources Used varied according to the resource.

4.3.2 Research Sub-Question 3B

The available data for the Tower D Library runs from January 2011 – June 2012. The library was permanently closed on June 19, 2012. Still, the research question remains: What is the relationship between Classification (Patient Family, Hospital Staff) and two descriptors of information needs (Request Type, Resources Used) as requested in the Tower D Library?

The chi-square tests for independence were run with a significance level of $p < .05$. If $p > .05$, it was concluded that there is no relationship between the variable and the Classification variable. If $p < .05$, it was concluded that there is a relationship between the variable (Request Type or Resources Used) and the Classification variable. If there is a relationship, *phi* and Cramer's V were used to identify the strength of the relationship. The data marked "not recorded" was not included in the chi-square analyses; however, the data are listed in the frequency tables to ensure the total sample sizes are accurate.

The Tower D Library received 255 information requests in the timeframe for which there is data available. Of those requests, 46.2% were Patient Family information requests and 53.7% were Hospital Staff information requests. Patient families largely requested Medical Information, as it accounted for 73.7% of that classification. Hospital Staff information requests were closely split between Clinical Information (43.1%) and Medical Information (37.2%). In regards to the library's total information requests, a majority (54.1%) was for Medical Information (see Table 4.21).

Table 4.21.

Frequency of Request Types at the Tower D Library

Classification	Request Type					Total
	Medical Information	Health and Wellness Information	Clinical Information	Non-Health Related	Not Recorded	
Patient Family	87	22	1	8	0	118
Hospital Staff	51	20	59	7	0	137
Total	138	42	60	15	0	255

The chi-square analysis shows a noteworthy difference between the Classification groups' type of information request, $\chi^2(3, N = 255) = 64.563, p < .001$ (with Cramer's $V = .503; p < .001$). The Cramer's V tells of a relatively strong association. Examination of the frequency data shows that the Classification groups differed greatly in their types of information requested. Patient Family information requests were largely for Medical Information, while Hospital Staff information requests were primarily for Clinical Information.

Turning to the Resource Used variable, the Internet was the resource used most frequently and the only one used more often than not for both Classification groups as well as the total Tower D Library information requests (see Table 4.22). For Patient Family information

requests, the two most frequently used resources were the Internet (71.2%) and Books (38.1%). Hospital Staff information requests most frequently employed the Internet (71.9%) and Subscription Databases (52.6%). There were two sets of data missing, thus N = 253 in the chi-square analysis.

Table 4.22.

Frequency of Resources Used at the Tower D Library

Classification	Books	Brochures	Internet	Subscription Databases	UT Southwestern Library	Other
Patient Family						
Yes	45	27	84	6	2	5
No	73	91	34	112	116	113
Hospital Staff						
Yes	6	2	97	71	37	49
No	129	133	38	64	98	86
Total						
Yes	51	29	181	77	39	54
No	202	224	72	176	214	199

Books were clearly used in more patient family requests than hospital staff requests.

The chi-square analysis supports this significant difference between the classifications, $X^2(1, N = 253) = 44.406, p < .001, \phi = .419$. This specifies a relatively strong association. Books were used more often for Patient Family information requests than for Hospital Staff information requests.

Brochures also were used much more for Patient Family requests than hospital staff requests. This significant difference is illustrated in the chi-square analysis, $X^2(1, N = 253) = 28.413, p < .001, \phi = .335$. The analysis shows a moderate relationship. Patient Family information requests used Brochures more frequently than Hospital Staff information requests.

The Internet was used most frequently for both Classification groups. This lack of difference is apparent in the chi-square results, $X^2(1, N = 253) = .014, p = .907$. The analysis shows a negligible and non-significant association between the variables. While there is no significant difference in the use of the Internet between the two Classification groups, it was the most frequently used resource for both Patient Family information requests and Hospital Staff information requests.

Subscription Databases were used much more frequently in Hospital Staff information requests than Patient Family information requests. Such a difference is a significant one, $X^2(1, N = 253) = 67.122, p < .001, \phi = .515$. There is a relatively strong relationship. The crosstabulation data shows that Subscription Databases were used more frequently for Hospital Staff information requests.

UT Southwestern Library was also used more frequently for Hospital Staff requests than for Patient Family requests. The difference is indeed a significant one, $X^2(1, N = 253) = 31.926, p < .001, \phi = .355$. This shows a moderate relationship. Hospital Staff information requests used the UT Southwestern Library more frequently than Patient Family information requests.

The Other category, too, saw a significant difference in usage between the Patient Family requests and Hospital Staff requests, $X^2(1, N = 253) = 38.547, p < .001, \phi = .390$. The analysis shows a moderate association. This resources was used more often in Hospital Staff information requests.

Discussion of Findings for Research Sub-Question 3B

Although the Tower D Library data spans only from 2011 – June 2012, there was a total of 10,551 visits during that time. Of which, only 255 or 2.4% were information requests. When broken down to total patient family and hospital staff visits, the Tower D Library saw a total of 6,156 patient family visits and 1,633 hospital staff visits. Patient families had only 118 information requests, 1.9% of the total visits; hospital staff had 137 information requests, 8.3% of their total visits.

The crosstabulations show that the types of requests to the Tower D Library follow the same pattern as the Holman Library. The patient families primarily requested Medical Information (73.7%) while hospital staff requested Clinical Information (43.1%). The resources used for these requests were also similar to Holman Library's usage: Patient Family requests were filled by the Internet (71.2%), Books (38.1%), and Brochures (22.9%); Hospital Staff requests were filled by the Internet (71.9%), Subscription Databases 52.6%), and Other (36.3%).

In the Tower D Library, the Request Type variable had a relatively strong relationship with the Classification variable. Brochures, UT Southwestern Library, and Other were the three variables with a moderate relationship to the Classification variable. Books and Subscription Databases both had a relatively strong relationship. The Internet was the only resource that had a negligible relationship with the Classification variable.

In conclusion, Classification and Request Type had a relatively strong relationship while the relationship between Classification and Resources Used varied according to the resource.

4.3.3 Research Sub-Question 3C

The third library analyzed is the Judith Kaplan-Einstein Library. What is the relationship between Classification (Patient Family, Hospital Staff) and two descriptors of information needs (Request Type, Resources Used) as requested in the Einstein Library?

Chi-square tests for independence were run with a significance level of $p < .05$. If $p > .05$, it was concluded that there is no relationship between the variable and the Classification variable. If $p < .05$, it was concluded that there is a relationship between the variable (Request Type or Resources Used) and the Classification variable. If there is a relationship, *phi* and Cramer's V were used to identify the strength of the relationship.

The Einstein Library received a total of 589 information requests from 2011 through 2013. A large majority of those requests were from patient families (90.2%) while only 9.8% were from hospital staff. Of the total information requests, 55.6% were for Medical Information, while Health and Wellness Information was a distant second with 28% (see Table 4.23). Patient Family information requests were typically for Medical Information (53.1%), while Hospital Staff information requests were for Clinical Information (53.4%).

Table 4.23.

Frequency of Request Types at the Einstein Library

Classification	Request Type					Total
	Medical Information	Health and Wellness Information	Clinical Information	Non-Health Related	Not Recorded	
Patient Family	313	156	2	60	0	531
Hospital Staff	15	9	31	3	0	58
Total	328	165	33	63	0	589

The significant difference in the types of information requests is apparently not only in the raw numbers in Table 4.22, but also in the chi-square data. The Patient Family and Hospital

Staff information requests differed significantly in the type of information requested, $\chi^2(3, N = 589) = 278.564, p < .001$ (with Cramer's $V = .688; p < .001$). Cramer's V shows a strong relationship significant on the $p < .05$ level. The Classification groups requested significantly different types of information.

Resources Used was the next descriptor of information needs that was analyzed for the Einstein Library information requests. Patient Family information requests were typically filled using the Internet (73.4%) and Brochures (43.3%), while the Internet (82.7%) and UT Southwestern Library (50%) were used most frequently for Hospital Staff information requests (see Table 4.24). Overall, the most frequently used resources at the Einstein Library were the Internet (4.3%) and Brochures (40.7%).

Table 4.24.

Frequency of Resources Used at the Einstein Library

Classification	Books	Brochures	Internet	Subscription Databases	UT	
					Southwestern Library	Other
Patient Family						
Yes	7	230	390	33	3	27
No	524	301	141	498	528	504
Hospital Staff						
Yes	1	10	48	17	29	6
No	57	48	10	41	29	52
Total						
Yes	8	240	438	50	32	33
No	581	349	151	539	557	556

Books were used in only 1.3% of Patient Family information requests and only 1.7% of Hospital Staff information requests. This is no great difference of usage between the groups, $\chi^2(1, N = 589) = 0.64, p = .800$. The analysis shows a negligible and non-significant association. Although there was not a significant difference of the use of Books between the Classification

groups, the crosstabulation data shows that Books were used more often in Patient Family information requests.

Brochures were used in 43.3% of Patient Family requests while only 17.2% of Hospital Staff information requests required them. This is a significant difference between the Classification's usage, $\chi^2(1, N = 589) = 14.723, p < .001, \phi = .158$. Although there is a relationship, it is a weak one. Examination of the crosstabulation analysis shows that Brochures were used more often for Patient Family information requests than for Hospital Staff information requests.

The Internet was used most frequently for each Classification group, 74.3% of Patient Family requests and 82.8% of Hospital Staff requests. Thus, there is no significant difference in its usage between the Classification groups, $\chi^2(1, N = 589) = 2.378, p = .123$. This shows a negligible and non-significant relationship.

Subscription Databases were utilized in only 6.2% of Patient Family information requests. It was used more frequently for Hospital Staff information requests (29.3%). This difference is significant, $\chi^2(1, N = 589) = 35.904, p < .001, \phi = .247$. There is a moderate association.

While the UT Southwestern Library was used in a mere 0.6% of Patient Family requests, it was utilized in a solid 50% of Hospital Staff information requests. This difference between the classification groups is a significant one, $\chi^2(1, N = 589) = 248.715, p < .001, \phi = .650$. The analysis shows a strong relationship between the two variables.

The Other category was used sparingly for both groups: 5.1% for Patient Family information requests and 5.6% for Hospital Staff information requests. There is not a significant

difference between Classification groups' usage of this resource, $X^2(1, N = 589) = 2.735$, $p = .098$. The analysis illustrates a negligible and non-significant association. There was little difference in the frequency of use between Patient Family information requests and Hospital Staff information requests.

Discussion of Findings for Research Sub-Question 3C

The Einstein Library received the highest number of total visitors. From 2011 through 2013, the Einstein Library saw a total of 59,196 visits. This is only the number of visits while the librarian was present. The Einstein Library is designed more like a waiting area, in that it has no doors and thus is available for visitors as long as the outpatient building is open. When the library is not staffed, the numbers are not recorded.

Of those 59,196 visits, only 589 were information requests. That is only 0.9% of the total visits. When considering only patient families and hospital staff visits, the total numbers are: 34,706 patient families and 4,421 hospital staff. In regards to the information requests, 531 were for patient families and 58 for hospital staff. That is only 1.5% of total patient family visits and 1.3% of hospital staff visits.

Nevertheless, the Einstein Library's data on request type matches the data from the Holman and Tower D Libraries: patient families primarily requested Medical Information while hospital staff tended to request Clinical Information. Medical Information was requested in 58.9% of Patient Family requests and Clinical Information was requested in 53.4% of Hospital Staff requests. The Patient Family requests mainly involved the Internet (73.4%) and Brochures

(43.3%), while the Hospital Staff requests were fulfilled using the Internet (82.8%) and UT Southwestern Library (50%).

What is the relationship between the Classification and the Request Type and Resources Used? The Request Type variable showed a strong relationship with Classification. The Resources Used variable, on the other hand, typically had a weak relationship with the Classification variable. Of the six resources analyzed, three had non-significant relationships: Books, Internet, and Other. The other three resources showed varying levels of strength. Brochures had a weak relationship, while Subscription Databases was a moderate one and UT Southwestern Library had a strong relationship. Only three of the resources – Brochures, Subscription Databases, and UT Southwestern Library – were significant at the $p < .05$ level. In conclusion, while the Classification had a significant and strong impact on what type of information was requested, it had very little impact on the type of resources used. Half of the resources had negligible relationships and only UT Southwestern Library showed a relationship stronger than a moderate one, and it was in fact a strong relationship.

In conclusion, Classification and Request Type had a strong relationship while the relationship between Classification and Resources used varied according to the resource.

4.3.4 Research Sub-Question 3D

The final research question looks at the Karahan Library. What is the relationship between Classification (Patient Family, Hospital Staff) and two descriptors of information needs (Request Type, Resources Used) as requested in the Karahan Library?

Chi-square tests for independence were run with a significance level of $p < .05$. If $p > .05$, it was concluded that there is no relationship between the variable and the Classification variable. If $p < .05$, it was concluded that there is a relationship between the variable (Request Type or Resources Used) and the Classification variable. If there is a relationship, *phi* and Cramer's V were used to identify the strength of the relationship.

The Karahan Library is located within a smaller CMC hospital campus approximately 23 miles north of the main hospital campus in Dallas. The library saw a total of 9,710 visits from 2011 through 2013, 143 of which were for information requests. Patient families submitted 75 (52.4%) of the requests, while hospital staff requested 68 (47.6%).

As shown in Table 4.25, a majority of the requests were for Medical Information (39.8%), followed by Health and Wellness Information (22.3%) and Clinical Information (20.2%). Requests from patient families were primarily requests for Medical Information (61.3%) or Health and Wellness Information (32%). Hospital Staff information requests were typically for Clinical Information (42.6%). There were 10 instances of missing data for the request types variable, thus $N = 133$ in the chi-square analysis.

Table 4.25.

Frequency of Request Types at the Karahan Library

Classification	Request Type					Total
	Medical Information	Health and Wellness Information	Clinical Information	Non-Health Related	Not Recorded	
Patient Family	46	24	0	5	0	75
Hospital Staff	11	8	29	10	10	68
Total	57	32	29	15	10	143

The significant difference between the Classification groups' type of information requested is illustrated in the chi-square results, $\chi^2(3, N = 133) = 58.948, p < .001$ (with Cramer's $V = .666; p < .001$). The Cramer's V shows a strong relationship between the two variables. The Patient Family information requests and Hospital Staff information requests requested very different types of information. Patient families requested primarily Medical Information, while hospital staff primarily requested Clinical Information.

Crosstabulations for the Resources Used variable in Table 4.26 show that in the total requests, the Internet was by far the most frequently used resource at 69.9% of Karahan Library's information requests. The second most frequently used resources were Books and Subscription Databases at 23.4% each. Patient Family requests used the Internet (81.1%) and Books (39.2%) most frequently. Hospital Staff information requests most often used the Internet (59.7%) and Subscription Databases (47.8%). There were two cases of data not being recorded and so $N = 141$ in the chi-square analyses.

Table 4.26.

Frequency of Resources Used at the Karahan Library

Classification	Books	Brochures	Internet	Subscription Databases	UT	
					Southwestern Library	Other
Patient Family						
Yes	29	10	60	1	0	4
No	45	64	14	73	74	70
Hospital Staff						
Yes	4	4	40	32	16	5
No	63	63	27	35	51	62
Total						
Yes	33	14	100	33	16	9
No	108	127	41	108	125	132

Books were used in 39.2% of Patient Family information requests and only 6.0% of Hospital Staff information requests. This difference is significant enough to be of note, $X^2(1, N = 141) = 21.645, p < .001, \phi = .392$. The analysis shows a moderate relationship between the variables. Books were used much more frequently in Patient Family information requests.

Brochures were used in 13.5% of requests for patient families and 6.0 % of requests for hospital staff. This is not a significant difference, $X^2(1, N = 141) = 2.237, p = .135$. There is a weak and non-significant relationship. Although there is not a significant difference in use between the Classification groups, the crosstabulation data shows that Brochures were used more often for Patient Family information requests.

The most frequently used resource, the Internet, was utilized in 81.1% of Patient Family requests and 59.7% of Hospital Staff requests. The difference between the classification groups is not a large one, $X^2(1, N = 141) = 7.794, p = .005, \phi = .235$. This shows a moderate association. Although it was the most frequently used resource for both Classification groups, the crosstabulation data shows the Internet was used more often in Patient Family information requests.

Subscription Databases were used overwhelmingly for Hospital Staff information requests (47.8%), while it was used in only 1.4% of patient family requests. This is a significant difference between the groups' usage of the resource, $X^2(1, N = 141) = 42.248, p < .001, \phi = .547$. There is a relatively strong association. Hospital Staff information requests used Subscription Databases much more frequently than Patient Family information requests.

The UT Southwestern Library was not used at all for Patient Family information requests. It was used in 23.9% of Hospital Staff information requests. The difference is a large

difference, $\chi^2(1, N = 141) = 19.934, p < .001, \phi = .376$. The analysis shows a moderate association. The UT Southwestern Library was used more often in Hospital Staff information requests.

The Other category was used in only 5.4% of information requests for patient families and 7.5% of requests for hospital staff. There is not a significant difference for this resource, $\chi^2(1, N = 141) = .249, p = .618$. There is a negligible and non-significant relationship. Examination of the crosstabulation data shows that there is a difference of only one use between the two Classification groups: Patient Family information requests used the Other category four times, while Hospital Staff information requests used it five times.

Discussion of Findings for Research Sub-Question 3D

The Karahan Library served the smallest number of visitors each year, thus it is no surprise it received the smallest number of information requests. Of its 9,710 total visits, there were a total of 5,842 patient family visits and 893 hospital staff visits. In regards to information requests, Patient Family information requests made up 1.2% of their total visits; Hospital Staff information requests were 7.6% of their total visits.

Although the Karahan Library had the fewest number of information requests, the request type data matches that of the other libraries: patient families requested Medical Information most often while hospital staff mainly requested Clinical Information. The resources used variable has differed between the libraries and that difference continues with the Karahan Library. The Internet was again the most frequently used resource for both Classifications. Books were the second most used resource for Patient Family information

requests (39.2%), and Subscription Databases were the second most used for Hospital Staff information requests (47.8%).

What exactly is the relationship between the Classification variable and the Request Type and Resources Used variables? The Request Type variable had a strong relationship between the two variables, and thus the Classification variable had a significant impact on what type of information was requested. The Resources Used variables showed varying levels of association. Books, Internet and UT Southwestern Library had a moderate relationship with the Classification variable. Brochures and Other showed non-significant relationships, while Subscription Databases had a relatively strong association. Thus, there were relationships between the Classification variable and Resources Used; however, they were varied and not all were significant at the $p < .05$ level.

In conclusion, Classification and Request Type had a strong relationship while the relationship between Classification and Resources Used varied according to the resource.

4.4 Summary

The data presented in this study illustrates that patient families sought primarily Medical Information and Health and Wellness Information. A majority of those requests were submitted to the Einstein Library, took an average of five minutes to fill, and were most often in the format of Brochures or information from the Internet. Hospital staff, on the other hand, mainly requested Clinical Information from the Holman Library, which took an average of 30 minutes to fill, and most often used the Internet and Subscription Databases to fill. The libraries served a wide variety of 98 departments and 73 job titles.

In regards to the relationships between Classification and Request Type and Resources Used, the overall data showed a strong relationship between Classification and Request Type. The relationship between Classification and Resources used varied according to resource. Also, the relationships varied by year and by library. Table 4.27 presents the relationship of the variables by library.

Table 4.27.

Relationships of Classification and Request Type, Resources Used by Library

Library	Request Type	Resources Used					
		Books	Brochures	Internet	Subscription Databases	UT Southwestern Library	Other
Holman Library	Moderate	Relatively strong	Moderate	Weak	Moderate	Moderate	Relatively Strong
Tower D Library	Relatively Strong	Relatively Strong	Moderate	Negligible*	Relatively Strong	Moderate	Moderate
Einstein Library	Strong	Negligible*	Weak	Negligible*	Moderate	Strong	Negligible*
Karahan Library	Strong	Moderate	Weak*	Moderate	Relatively Strong	Moderate	Negligible*

Note. * = Non-significant at the $p < .05$ level.

The relationships between Classification and Request Type and Resources Used varied greatly by library, for there is no consistent result across all libraries. Each library has its unique setting and differs in the resources used to meet the visitors' information needs.

The descriptive, chi-square, and crosstabulations analyses produced a good first look into the information needs of patient families and hospital staff at CMC. The Family Resource Libraries have served a variety of information needs using multiple resources and dedicating various amounts of time for each information request. And that is only for information

requests; the data in this research does not include the use of other library resources such as leisure books, laptop checkout and general computer usage.

CHAPTER 5

CONCLUSIONS AND FUTURE RESEARCH

This research analyzed the information requests of patient families and hospital staff submitted to the four Family Resource Libraries at CMC in order to build an understanding of their information needs. Three years of library statistics provided a wealth of data showing the type of information requested, the resources used to fill those requests, the time spent on the information requests and the library in which the requests were received. This chapter will succinctly review each research question and its major findings, followed by general observations and opportunities for future research.

Research Question 1

To what extent have patient families used the Family Resource Libraries to meet their information needs?

Patient families sought primarily medical information in formats that they could take home with them. The Internet was the most used resource and the information was typically printed out for the families to take with them at no charge. Their requests did not take much time to fulfill, for a majority was answered in five minutes or less. Nevertheless, information requests accounted for only 1.45% of patient families' library usage.

Research Question 2

To what extent have hospital staff used the Family Resource Libraries to meet their information needs?

Hospital staff sought primarily clinical information for the purposes of EBP and Research. The Internet was the most used resource, followed closely by Subscription Databases. The time it took for the library staff to fulfill their requests varied, yet a majority were answered within 30 minutes. Nevertheless, information requests accounted for only 5.32% of hospital staff's library usage.

Research Question 3

What is the relationship between Classification (Patient Family, Hospital Staff) and two descriptors of information needs (Request Type, Resources Used)?

Classification and Request Type had a strong relationship, meaning there was a significant difference between the types of requests for the two Classification groups.

The relationship between Classification and Resources Used varied. Subscription Databases, UT Southwestern Library, and Other showed the strongest relationships with the Classification variable. They each had a relatively strong relationship, meaning the usage of these resources differed greatly between the Classification groups.

The Internet, which was used most often in the information requests for both Classifications, had the weakest relationship with Classification – a negligible relationship. This means that there was not a great difference in its usage for the two groups, for it was used frequently for both. The weaker the relationship, the less difference there was in usage for the Patient Family and Hospital Staff information requests.

Research Sub-Question 3A

What is the relationship between Classification (Patient Family, Hospital Staff) and two descriptors of information needs (Request Type, Resources Used) as requested in the Holman Library?

Classification and Request Type had a moderate relationship, meaning there was some difference between the types of requests for the two Classification groups.

The relationship between Classification and Resources Used varied. Books and Other showed relatively strong relationships. Books were used more frequently with Patient Family information requests, while Other was used more frequently with Hospital Staff information request. The Internet showed a weak relationship, meaning there was little difference in Internet usage for the Classification groups. It was the most used resource for all information requests in the Holman Library.

Research Sub-Question 3B

What is the relationship between Classification (Patient Family, Hospital Staff) and two descriptors of information needs (Request Type, Resources Used) as requested in the Tower D Library?

Classification and Request Type had a relatively strong relationship. The types of information requests differed more for patient families and hospital staff in the Tower D Library than in the Holman Library, where there was a moderate relationship.

The relationship between Classification and Resources Used varied. Books and Subscription Database had relatively strong relationships, for Books were used more in Patient Family information requests while Subscription Databases were used more in Hospital Staff

information requests. The Internet, used most frequently in all information requests, had a negligible relationship with Classification. There was very little difference in its usage for Patient Family and Hospital Staff information requests.

Research Sub-Question 3C

What is the relationship between Classification (Patient Family, Hospital Staff) and two descriptors of information needs (Request Type, Resources Used) as requested in the Einstein Library?

Classification and Request Type had a strong relationship, meaning there was a significant difference in the type of information requests between patient families and hospital staff.

The relationship between Classification and Resources Used varied. There was a strong relationship between Classification and UT Southwestern Library, meaning the usage of UT Southwestern Library differed significantly between the two Classifications of information requests. Subscription Databases showed a moderate relationship, while Brochures had a weak relationship. Books, Internet, and Other all had negligible relationships with the Classification variable. They were not used as frequently as the Internet; rather their relationship was negligible due to the small number of instances in which they were used. Such small numbers of usage did not differ greatly between patient families and hospital staff.

Research Sub-Question 3D

What is the relationship between Classification (Patient Family, Hospital Staff) and two descriptors of information needs (Request Type, Resources Used) as requested in the Karahan Library?

Classification and Request Type had a strong relationship, meaning the type of information requested differed significantly between the two Classification groups.

The relationship between Classification and Resources Used varied. Subscription Databases showed a relatively strong relationship, meaning that there was a great difference in its usage for the information requests. It was used frequently in Hospital Staff information requests (46.1%), yet rarely used for Patient Family information requests (1.4%). Brochures showed a weak relationship, differing little in its usage between the two classification groups. Other had a negligible relationship. In this case, a weak or negligible relationship means that the resource was used in a similar, yet small, frequency for both Patient Family and Hospital Staff information requests. There simply was not a great difference between the usage for these groups of information requests.

General Observations

Information requests from both patient families and hospital staff were an extremely small percentage of their total library visits. The total number of information requests steadily declined between 2011 and 2013. Patient Family information requests also declined, while Hospital Staff information requests slowly increased. This decline in information requests could be contributed to a variety of factors such as the accessibility of the libraries (the Holman Library secluded on the hospital's 7th floor versus the Einstein Library on the main lobby of

outpatient building) or the information behavior of patient families (when first request is fulfilled and they learn where to look for the information, do they find information on their own in the future instead of requesting assistance from the library staff?). When assisting patient families and hospital staff, the library staff would often give them a free Medline Plus pen and recommend its website (listed on the pen) as a good starting point in searching for medical or health information. By teaching patient families and hospital staff where to look for information, did the libraries contribute to the decline of information requests?

The general accessibility of the libraries may play a part in the number of visitors and information requests received. The Einstein Library, located inside the main entry of a busy outpatient building, received by far the most number of visitors as well as the most number of Patient Family information requests. Furthermore, usage statistics for the Einstein Library were recorded only when the librarian was present; therefore, because the librarian was unable to be present during all hours the outpatient building was open, it can be concluded that the actual number of visitors was higher than the statistics show. The Holman Library, located on the 7th floor of the main hospital in between two acute care areas, received a much smaller number of visitors and information requests. However, the Holman Library did receive the most number of Hospital Staff information requests after the closing of the Tower D Library, possibly due to the outreach efforts of the library staff.

In regards to the type of information requested, specific documents were requested more frequently by hospital staff than by patient families. This difference shows that while hospital staff at times did come to the libraries for full text access to specific articles, chapters, or books, patient families came with more general requests. Also, the fact that just 37.6% of

Hospital Staff information requests were for specific documents illustrates that the staff, too, sought more general information from the libraries.

The topics data show that there were 369 unique topics requested. In comparing the most requested topics, the consistent requests for information on the nutrition, diet, exercise topic points to the great number of health and wellness information requests (see Table 4.1). However, when looking at the data pertaining to Request Type, the Health and Wellness Information category is not the most requested. Medical Information and Clinical Information have higher numbers. What does this mean? This may reveal the impact of requests for more specific topics. Even though there are more Medical Information requests, the topics requested are so specific that they cannot be compiled into one topic. On the other hand, the topic of nutrition, diet, exercise is general enough for multiple requests to be easily compiled.

The increase of requests for the nursing research topic in 2013 show the increasing number of Hospital Staff information requests. Nurses were primarily requesting information for EBP and Research, as they were often involved in the updates and revisions of policies and procedures, as well as annual nursing conferences and presentations. Also, one library staff member was involved with the Magnet Nursing certification process in 2013.

For Resources Used, the Internet was the most frequently used in both Patient Family and Hospital Staff information requests. It was used in 71.9% of total information requests. The library staff provide extensive bookmarks on all of their computers and laptops to make it as easy as possible for patient families and hospital staff to locate reliable medical and health and wellness information. They also make it a priority to show the requestor how to find the

information on their own. Therefore, it is not surprising to see the Internet as the most used resource.

The declining Patient Family information requests forced the use of the Internet to decline for their requests; however, when looking at the percentage instead of the numbers, the use of the Internet for Patient Family information requests fluctuates from year to year. Brochures, the second most frequently used resource for Patient Family information requests, steadily increased each year. In 2012, the librarian at the Einstein Library pushed for a larger budget with which to purchase more brochures. The data shows that this paid off, as the usage of Brochures increased year over year.

In regards to Hospital Staff information requests, the use of the Internet steadily increased each year. The use of Subscription Databases, the second most frequently used resources for Hospital Staff information requests, fluctuated from year to year. This fluctuation may be due to the increase in usage of both UT Southwestern Library and Other for Hospital Staff information requests.

The libraries contribute to PFCC each time they help a patient and their family. This includes, but is not limited to, providing health or medical information, finding a book for a patient or family, assisting a patient or family member in using the computer, printing pictures, or finding directions to a hotel, restaurant, store, or driving directions. Unfortunately, a large majority of these instances were not recorded in the library statistics; therefore, the data used in this study cannot accurately show exactly how the libraries contribute to PFCC. The overall library statistics on visits show a total of 91,966 non-staff visitors from 2011 – 2013. This includes patients, patient families, and friends. How many library visitors requested other

assistance? That is not known, but what is known is that 0.93% requested information from the library staff. Therefore, the libraries at least contributed to PFCC by answering 848 patient family requests, a majority of which were for Medical Information and Health and Wellness Information; information which is likely tied to the care and wellbeing of their child.

The libraries support the hospital-wide initiative of creating a strong academic environment each time they perform research for hospital staff. This includes research for the purpose of EBP, Research and even Other. In the Other category lies requests for information on Master's and PhD programs in Nursing, proper APA citation formatting, how to find and apply for grants. The library statistics show a total of 10,473 visits from hospital staff during the years 2011 – 2013. In only 5.32% of those visits were information requested. In each year of analysis, Hospital Staff information requests hovered at approximately 5% of their total library usage. This consistent need for information could be interpreted as opportunities for the libraries to advocate for additional research and services to better meet their ongoing information needs. Of those requests, a majority of the information was requested for the purpose of EBP or Research. Such purposes most likely relate directly to their daily work, whether to improve policies and procedures, update guidelines, or begin their own research study based at CMC. All of these requests, and thus the information provided to fill the requests, helped hospital staff from various positions and various levels contribute to creating a stronger academic environment within the hospital walls. The libraries, originally built only for patients and patient families, began reaching out to hospital staff, recognizing their information needs, and assisting them with research. In doing so, they, too, have helped create a stronger academic environment.

The statistics used in this study did present some challenges along the way. Data that was simply not recorded left gaps in the analyses. For example, some Hospital Staff information requests were simply recorded as “four specific articles.” There was no subject, and many times there was no job title, department, or reason for request recorded. It was disappointing that the Topics data was not specified between Patient Family information requests and Hospital Staff information requests. This breakdown of data would provide wonderful insight into exactly what each Classification group needed and would greatly assist the libraries in their collection development efforts. The fact that these statistics were not originally recorded for the purposes of this study make such inconsistencies unavoidable.

In addition, the lack of hospital-wide data prevented the application of the statistics to a larger picture. For instance, the knowledge of any local outbreak of disease, such as the flu or the recent Ebola outbreak, and the accompanying increase in hospital census would provide an interesting comparison to the number of Patient Family and Hospital Staff information requests at the libraries. Also, any knowledge of large hospital staff research initiatives, upcoming conferences, or major update of policies and guidelines would be another interesting comparison to the number of hospital staff information requests at the libraries. Such knowledge would help explain and predict increases in information requests as well as the type of information requested.

Another limitation of this data was that it did not divulge the reason for every information request. As mentioned in Chapters 1 and 2, many patient families of pediatric patients experience a strong need for information throughout their child’s care. Information and emotion, information avoidance, and information behavior are all areas of research that

would aid hospitals – their libraries as well as their administration and clinical staff – in better understanding the information needs of patient families. In recording the reason patient families request information and how they use information, hospital libraries could further tailor their services, resources, and outreach to patient family information needs, resulting in stronger PFCC. Are they requesting it for themselves – to help them and/or their spouse cope? Or do they need the information to explain the disease or diagnosis to the patient and/or siblings? Do they want to know as much as possible all at once? Or do they request the information in stages, as they become ready to face it? Though the data presented in this study does provide some insight into the reasons for Hospital Staff information requests, it provides no such data for Patient Family information requests. This is a limitation of this study; it is also a great area for future research.

In spite of the inconsistencies in the recorded data and the lack of hospital-wide information, the library statistics alone provide an interesting glimpse into the information needs of the patient families and the hospital staff. Information requests make up a small percentage of the work and services the libraries provide; yet it is a task that has a direct impact on PFCC and the research efforts of hospital staff. The small number of requests – as well as the decreasing number of patient family information requests – over the three-year period leaves opportunities for improvement within the libraries. How can the libraries increase their outreach efforts to patient families? What departments can the libraries collaborate with to not only provide better information directly to the patient families but to also make them aware of the libraries and their services? Exactly where in their collections can the libraries improve their resources, the format of their resources to better meet the needs of the patient families? In

regards to hospital staff information requests, there are just as many questions. How can the libraries play a bigger role in aiding the information needs and research efforts of hospital staff? How can the libraries reach out to more hospital staff? What departments and staff can the libraries collaborate with to play a bigger role in hospital-wide research initiatives? What resources do the libraries need to provide better services to the hospital staff?

Though this study raises more questions, it proved to be a good starting point for understanding the information needs of both patient families and hospital staff within pediatric hospitals. The data provided a great variety and depth of information and showed that there are ways to obtain even more insight through library usage statistics. This is simply the beginning.

Future Research

Areas for future research can develop a better understanding of patient family and hospital staff information needs. How can the libraries record more in-depth information about their visitors' information needs? One way would be to also track hospital- and community-wide health events, such as outbreaks of the flu or Ebola. By tracking this information, the libraries could see if the number of information requests is at all related to the number of beds filled in the hospital or any general health concerns peaking in the local community. Also, further research into the resources used is needed. Exactly why was the Internet the most used resource for all information requests at the CMC Family Resource Libraries? Is it the most convenient or the most trusted library resource? What specific Internet resources were used most frequently?

For patient family information needs, understanding patient families' reasons for information requests and their use of the information is another portal through which to better understand their information. How can hospital libraries track this information in an accurate and non-threatening manner? Also, it may be worthwhile to record the patient family's emotional state when requesting the information. Is the individual distraught or optimistic, anxious or apathetic, angry or compassionate? Such information could aid in comprehending their information behavior, information needs and even contribute to the study of information and emotion.

In regards to hospital staff information needs, tracking the total number of hospital staff employed and comparing that number to the number of hospital staff information requests would also produce good data. If the number of employees at the hospital increases, does the number of information requests increase as well?

Another area of future research is best practices in recording library usage statistics. In what ways can libraries record more meaningful statistics in order to gain deeper insight into their users' information needs and library usage? A review of the current literature found no studies that analyzed library statistics. Yet this research shows the amount of information that can be gained by recording basic usage statistics. How can libraries identify best practices for recording and analyzing library statistics? What is the best way to apply the information and understanding learned from such analyses? This is an area of research, especially in hospital libraries, that is ripe with possibilities.

Finally, in looking at the larger picture, questions of information access and information organization arise from the fact that such a small percentage of both patient families and

hospital staff requested information from the libraries. If they are not requesting information from the libraries, where do they obtain their information? Do they access the information on their own? Are they familiar enough with the resources that they do not require the assistance of the library staff? Or are they simply not aware there is a hospital library that can help them? Yet the greater question is: How can hospital libraries improve the access to and organization of medical, health and wellness, and clinical information for the use of both patient families and hospital staff? And what exactly are those areas needing improvement? There are many possible answers – outreach, marketing, special events in the library or collaboration with various departments – but not all may work for all hospital libraries. What can the CMC libraries – libraries that were built for patients and families but now also serve hospital staff because there is no other library available to staff – do? It is an area of research deserving of greater investigation.

Summary

The purpose of this research was to understand how the CMC Family Resource Libraries assist patient families and hospital staff in locating information in a pediatric hospital. The data analyzed from the library usage statistics provided great insight into the information needs of pediatric families and hospital staff as well as how the libraries have served those needs.

This study can help the CMC libraries better identify and understand the patient family and hospital staff information needs. It also contributes to the greater understanding of patient family and hospital staff information needs within a pediatric hospital. Additionally, this study can be replicated to understand the patient family and hospital information needs within other

types of hospitals. Hospital libraries have been working to aid in the healing of patients, in mind (bibliotherapy) and in body (providing information to hospital staff), for centuries. By working to further understand the information needs of patient families and hospital staff, hospital libraries continue to care for patients in numerous information-centric ways. To use the words of another hospital librarian: “[A]t the end of all our work is a patient” (as quoted in Forrest, 1998, p. 267).

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APPENDIX A

KRISSI HOLMAN'S STORY

The Krissi Holman Family Resource Library and Children's Collection

The Krissi Holman Family Resource Library and Children's Collection is named in honor of Krissi Holman. Krissi is a 2004 graduate of Highland Park High School. The library is the fulfillment of her dream — for Children's Medical Center Dallas to have a place where patients and families can gather and feel comforted.



Krissi was a patient at Children's Medical Center for over five years. She always felt at home with the warm environment that Children's provided. She also had wonderful friends who would visit her constantly throughout her hospital stays. But, Krissi understood that a hospital visit could be overwhelming and sometimes even confusing. So, she envisioned a cheerful and inviting place at the hospital where children and their families could have access to books that would entertain and comfort them.

In 2004, with a sparkle in her eyes and a "can-do" attitude, Krissi shared her dream of a library with her family and close friends. Her parents, Susan and Leon, as well as her older sisters, Danni and Katy, never were surprised by her enthusiasm for the project. "Krissi was sometimes referred to as 'mayor' of our block. She was always a leader. She always showed others kindness and compassion," explained Susan Holman.

Krissi's dream was realized by the creation of the library. Children's already was developing a family resource library where parents could access resources to research more information about their children's diagnoses and treatment options. Additional space and a special collection of children's books were added to the library through the charitable contributions of Krissi's family and many friends, and the entire library was named for Krissi.

Whether she was feeding the homeless or ministering to fellow teens through Bible study, Krissi always had an innate way of knowing exactly what people needed and how to best deliver it to them. Her vision for the Krissi Holman Family Resource Library and Children's Collection is Krissi's gift to the patients and families of Children's Medical Center. In the library, children can relax in comfortable seats and escape into their imaginations with books like *Love You Forever* or *The Runaway Bunny*. Parents can find research tools to learn valuable information and gain understanding. For everyone, the library is here to embrace you with encouragement and hope.

APPENDIX B

APPROVAL TO USE DATA FOR THIS STUDY



11/15/13

To Whom It May Concern,

Hannah Rutledge has permission to utilize all library statistics to complete her dissertation.

A handwritten signature in black ink, appearing to read "Kelly Ihejiawu".

Kelly Ihejiawu,

Manager School and Library Services

Children's Medical Center Dallas/Legacy

APPENDIX C

PATIENT FAMILY INFORMATION REQUEST FORM

Children's Medical Center Family Resource Libraries

Request for Information

Date of Request: _____ Time of Request: _____ AM/PM

Date & time information needed by: _____

Name: _____ Floor & Room: _____

Address: _____

City: _____ State: _____ Zip: _____

Email: _____ Phone: _____

Preferred mode of delivery:

Mail
 E-Mail
 Pick up at Library
 Deliver to Room


I need information about... (Please be as specific as possible. Define abbreviations if you can.)

Preferred language: _____

I would prefer (check all that apply):

Books Websites
 Pamphlets or Articles Support Group
 Videos Laptop (for use in hospital only)
 Other: _____

Library	Location	Phone	Librarian
Krissi Holman Library	C7-310	214.456.7735	Pauline Martin Hannah Rutledge
Ambulatory Care Pavilion Library	F1504	214.456.4787	Carol Miller
Karahan Family Resource Library (Legacy)	L1275	469.303.7735	Albi Calman



APPENDIX D

INFORMATION REQUESTS LOG

Information Requests - Krissi Holman Library - December 2013					
Date	Topic	Who Needed Info?	Staff/Vol. Initials	Where did you find information?	Time Spent
		Family/friend of pt. Staff		Books/Brochures Internet Subscription databases Nothing found Other/Comment:	
		Family/friend of pt. Staff		Books/Brochures Internet Subscription databases Nothing found Other/Comment:	
		Family/friend of pt. Staff		Books/Brochures Internet Subscription databases Nothing found Other/Comment:	
		Family/friend of pt. Staff		Books/Brochures Internet Subscription databases Nothing found Other/Comment:	
		Family/friend of pt. Staff		Books/Brochures Internet Subscription databases Nothing found Other/Comment:	
		Family/friend of pt. Staff		Books/Brochures Internet Subscription databases Nothing found Other/Comment:	

APPENDIX E

INDIVIDUAL LIBRARY REQUESTS SPREADSHEET

HOLMAN REFERENCE REQUESTS					
DATE	REQUESTED TOPIC	WHO REQUESTED INFO	SOURCE USED	NOTES	Time Spent (minute)

APPENDIX F

YEARLY TOPICS (PAGE ONE ONLY)

Topic/2013	Holman	Dallas ACP	Legacy	Total Requests
Abdominal Pain	1			1
Abscess				0
Absence seizures				0
Achalasia				0
Acid Reflux		2		2
Acne				0
ADA issues & concerns				0
ADD/ADHD	1	2	1	4
Addison's Disease				0
ADEM				0
Adenovirus				0
Adolescent Health & Behavior		2		2
Adoption				0
AIDS/HIV				0
Airways				0
Alagille syndrome				0
Alcohol prevention				0
Alexander Disease				0
ALL	1			1
Allergies		1		1
Allergic aspergillosis				0
Alopecia				0
Alpha thalassemia				0
Alternative medicines	1			1
Alzheimer's		2		2
AML				0
Amputation				0
Anaphylaxis				0
Anaplastic Astrocytoma				0
Anatomy	1			1
Anemia		1		1
Anesthesia	1	1		2
Aneurysm				0
Angel Flight/modes of transport				0
Anger management				0
Anorectal malformations				0

APPENDIX G

CUMULATIVE TOPICS (PAGE ONE ONLY)

2005 - present					
Topic	Holman	Tower	Dallas ACP	Legacy	Total
Abdominal Pain	2			1	3
Abscess	1	1			2
Absence Seizures			2		2
Achalasia	2				2
Acid reflux	2		5		7
Acne	1				1
ADA issues & concerns			1		1
ADD/ADHD	6	4	33	2	45
Addison's Disease	1	1	2		4
ADEM	2	1			3
Adenovirus	2	1			3
Adolescent Health & Behavior			3		3
Adoption	2		2		4
AIDS/HIV	1		1		2
Airways	2				2
Alagille syndrome	1				1
Alcohol prevention			1		1
Alexander Disease			1		1
ALL	2			1	3
Allergies	5		14	2	21
Allergic aspergillosis	1				1
Alopecia			1		1
Alpha Thalassemia			2		2
Alternative medicines	2		2		4
Alzheimer's	1		3		4
AML	1				1
Amputation	2	1			3
Anaphylaxis	1		1		2
Anaplastic Astrocytoma	1				1
Anatomy	1	2			3
Anemia	2		2	1	5
Anesthesia	4	2	1		7
Aneurysm			1		1
Angel Flight/modes of transport			1		1

APPENDIX H

INFORMATION REQUESTS TRACKING

Family Resource Libraries: Information Requests Tracking 2013						
JANUARY						
	Staff Req	Time Spent Staff Req	Fam Req	Time Spent Fam Req	Total Req	Total Time
Holman	10	168	2	10	12	178
Pavilion	3	107	10	57	13	164
Legacy	2	25	3	25	5	50
Totals	15	300	15	92	30	392
FEBRUARY						
	Staff Req	Time Spent Staff Req	Fam Req	Time Spent Fam Req	Total Req	Total Time
Holman	10	300	6	55	16	355
Pavilion	0	0	12	58	12	58
Legacy	0	0	3	25	3	25
Totals	10	300	21	138	31	438
MARCH						
	Staff Req	Time Spent Staff Req	Fam Req	Time Spent Fam Req	Total Req	Total Time
Holman	11	515	0	0	11	515
Pavilion	0	0	12	39	12	39
Legacy	2	132	0	0	2	132
Totals	13	647	12	39	25	686
APRIL						
	Staff Req	Time Spent Staff Req	Fam Req	Time Spent Fam Req	Total Req	Total Time
Holman	13	512	2	85	15	597
Pavilion	2	50	6	27	8	77
Legacy	1	5	3	30	4	35
Totals	16	567	11	142	27	709
MAY						
	Staff Req	Time Spent Staff Req	Fam Req	Time Spent Fam Req	Total Req	Total Time
Holman	12	542	5	30	17	572
Pavilion	1	25	7	25	8	50
Legacy	1	20	3	40	4	60
Totals	14	587	16	95	29	682

JUNE						
	Staff Req	Time Spent Staff Req	Fam Req	Time Spent Fam Req	Total Req	Total Time
Holman	21	1135	2	10	23	1145
Pavilion	3	104	8	52	11	156
Legacy	0	0	0	0	0	0
Totals	24	1239	10	62	34	1301
JULY						
	Staff Req	Time Spent Staff Req	Fam Req	Time Spent Fam Req	Total Req	Total Time
Holman	14	1140	4	23	18	1163
Pavilion	1	2	9	45	10	47
Legacy	1	10	2	20	3	30
Totals	16	1152	15	88	31	1240
AUGUST						
	Staff Req	Time Spent Staff Req	Fam Req	Time Spent Fam Req	Total Req	Total Time
Holman	17	996	4	90	21	1086
Pavilion	2	12	8	37	10	49
Legacy	1	50	2	40	3	90
Totals	20	1058	14	167	34	1225
SEPTEMBER						
	Staff Req	Time Spent Staff Req	Fam Req	Time Spent Fam Req	Total Req	Total Time
Holman	31	1847	3	45	34	1892
Pavilion	1	25	8	35	9	60
Legacy	0	0	1	20	1	20
Totals	32	1872	12	100	44	1972
OCTOBER						
	Staff Req	Time Spent Staff Req	Fam Req	Time Spent Fam Req	Total Req	Total Time
Holman	12	610	2	25	14	635
Pavilion	6	293	20	82	26	375
Legacy	0	0	5	80	5	80
Totals	18	903	27	187	45	1090
NOVEMBER						
	Staff Req	Time Spent Staff Req	Fam Req	Time Spent Fam Req	Total Req	Total Time
Holman	9	315	8	70	17	385

Einstein	4	382	13	55	17	437
Legacy	1	15	1	30	2	45
Totals	14	712	22	155	36	867
DECEMBER						
	Staff Req	Time Spent Staff Req	Fam Req	Time Spent Fam Req	Total Req	Total Time
Holman	3	270	2	55	5	325
Einstein	0	0	7	16	7	16
Legacy	2	65	2	20	4	85
Totals	5	335	11	91	16	426
GRAND TOTALS						
	Staff Req	Time Spent Staff Req	Fam Req	Time Spent Fam Req	Total Req	Total Time
Holman	163	8350	40	498	203	8848
Einstein	23	1000	120	528	143	1528
Legacy	11	322	25	330	36	652
2013 Totals	197	9672	185	1356	382	11028

APPENDIX I

STAFF INFORMATION REQUEST FORM

Literature Search Request

Name/Job title: _____
Phone: _____ Fax: _____
Email: _____
Department: _____ Mail Stop #: _____
Delivery: Pick up at library Campus mail Fax E-mail

Literature is needed for (please choose only one):
 Evidence-based practice project
 Research project – List title or proposed title (research projects only):

 Other – Please explain:



Date needed: _____

In order to ensure that the information is at the highest quality of service, all searches will require a minimum of 72 hours; if a search is completed early you will be contacted. All literature searches submitted during the weekend will be attended to the following Monday.

Search details:
Describe the purpose of your search. Be as specific as possible. List the terms that should and should not be included in the results.

Email, phone or fax your request to a Children's medical librarian:

Email	Phone	Fax	Library	
albertine.calman@childrens.com	37735	33048	Karahan (Legacy)	L1275
pauline.martin@childrens.com	60357	60152	Krissi Holman	C7310
hannah.rutledge@childrens.com	62810	60152	Krissi Holman	C7310
carol.miller@childrens.com	64787		Pavilion	F1504



APPENDIX J

STAFF REQUESTS SPREADSHEET

Staff Requests - 2013							
Requestor/Department	Date	Topic	Resources Used	Additional Comments	Library	Time	EBP, Research, Other?