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The Impact of an Implemented Scribe Program in Emergency Room Settings on Patient and Provider Satisfaction, Overall Patient Volume, and Emergency Room Cost Effectiveness

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ABSTRACT

The purpose of the study is to evaluate medical scribe programs in emergency room settings as to their role, impact on patient satisfaction, patient volume, and cost-effectiveness, as well as their perceived value by emergency room medical providers through survey methods. This prospective, quantitative research study obtained information via surveys of Emergency Physicians Professional Association (EPPA) providers concerning the value emergency room providers placed on the function and role of scribes in emergency room settings. The data obtained from the surveys was analyzed using correlation and comparison of means. The results of the study indicated that emergency room providers thought the utilization of an emergency room scribe program had tremendous positive impacts on a variety of patient satisfaction and provider job performance factors.

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CHAPTER ONE: Introduction

Introduction

"We are again at a time of great change. The doctors of medicine long have been revered like priests of old; scribes copied their words as a holy writ that the public could not easily access. Then came the electronic medical record. Now patients, doctors, nurses and scribes are trying to find their way in this new world. Each has a place in the system of care and scribes are walking a new path." Regina Holliday, "The Scribe" (Holliday, 2012).

The use of medical scribes in emergency room settings continues to be a growing trend in the medical field. According to the American College of Medical Scribe Specialists (ACMSS) (2013), the number of medical scribes has been doubling annually, with about 20,000 expected to be working at the nation's hospitals and clinics by the end of the year 2014. As the medical field evolves into a more digital and electronic era, many medical care facilities must replace their patient's paper medical charts for electronic medical records. With state government putting time sensitive mandates into place requiring healthcare systems and health care providers to develop a fully functioning electronic health record system, many provider groups need to act swiftly to fill gaps that this may cause. Many medical facilities have found the conversion to be a challenge and the introduction of electronic medical records at their facility have led to a decrease in provider productivity, especially as many aging providers are having to use electronic health systems for the first time (Conn & Meyer, 2013). One physician, who has limited experience with typing and electronic medical records in practice, simply states, "I'm a pretty expensive typist. I spend more time looking at the computer screen

than at the patient." Randall Oliver, MD (Guglielmo, 2006). Not only does the implementation of electronic health records impact provider productivity but it may also have implications on overall patient care and satisfaction in these medical settings. Many facilities consider the use of scribes to help their providers fill the gaps and continue to meet the intense demands of the ever-changing field of medicine (Guglielmo, 2006).

Differing opinions exist on the benefits of the implementation of a scribe program in an emergency room setting. Some medical providers value the utilization of scribes and have expressed that not only do patients like scribes because it frees up the provider to focus on them and their care, but that using scribes frees the provider up to do other direct care patient related tasks opposed to documentation (Guglielmo, 2006). Others have attested that the use of scribes have positive financial implications, as providers are able to complete more billable tasks when scribes are utilized (Guglielmo, 2006). Other providers still see the limitations of scribes, such as viewing the use of scribes as a "shortcut" to treating the patient, as doctors may miss the big picture of the treatment plan since they are not independently preparing the documentation (Guglielmo, 2006).

The exact role of a medical scribe may vary depending on the medical facility and provider group; however, medical scribes are trained to collaborate with physicians and advanced practiced providers in various medical care settings (Emergency Physicians Professional Association [EPPA], 2011). Scribes often manage the charting in the electronic heath record of the patients of their assigned provider, intending to free the provider from clerical/documentation duties to allow them more time for direct patient care (EPPA, 2011). One Minnesota Twin Cities based physician group, Emergency Physicians Professional Association (EPPA) which was founded in 1969, has an

implemented scribe program and has found the use of scribes to be beneficial in their collaborating emergency and urgency rooms (EPPA, 2011). EPPA attests their scribes to be "masters of the electronic medical record" and "a real contributor to the future of healthcare," as well as "enable physicians to spend more time with individual patients and increase the overall flow of patients in the department" (EPPA, 2011). Although many medical facilities may share these same values regarding scribe utilization in emergency room settings and already have implemented scribe programs, not all hospitals and clinics have scribe programs in place. Facilities without scribes may be in need of more evidence based findings as to the exact impact of scribes prior to scribe utilization. This study aims to bridge this gap by investigating the impact of scribes in emergency room settings.

Problem Statement

Physician groups may want to implement a scribe program at their hospital. Due to the lack of published studies that outline the direct impact the use of scribes has on provider productivity, the deemed value of scribes by providers, or overall patient satisfaction, many hospital administrators may not be able to justify the implementation of a scribe program without this information.

Purpose

The purpose of the study is to evaluate scribe programs in emergency room settings as to the value provider's place on their role, impact on patient satisfaction, patient volume, and cost-effectiveness, as well as their perceived value by emergency room medical providers through survey methods.

Significance of the Study

As the need for emergency medical services continues to grow, an imperative need exists to identify factors that may enhance the overall operation of emergency room services. It is uncertain how the use of scribes plays a role in enhancing these services as there continues to be very limited research published that addresses how the use of scribes impacts provider productivity, the deemed value of scribes by providers, and overall patient satisfaction in emergency room settings. Therefore, many administrators who are considering implementing scribe programs can only rely on anecdotal evidence (Arya, Salovich, Ohman-Strickland, & Merlin, 2010). The findings of this study will contribute to helping medical providers and hospital administrators make an informed decision as to whether to implement a scribe program at their facility.

Research Questions

For the purposes of this study the researchers will quantitatively investigate the following research questions:

1. How is emergency room patient satisfaction affected when a physician group has an implemented scribe program?
2. What value do emergency room providers place the function and role of scribes in an emergency room setting?
3. How does the utilization of a scribe program impact overall patient volume of an emergency room?
4. How does an implemented emergency room scribe program impact the cost effectiveness of an emergency room?

CHAPTER 2: Literature Review

Introduction

The purpose of this chapter is to summarize the current pertinent literature related to this research study. The main focus of this research project is to evaluate the impact scribe programs have in emergency settings within the Twin Cities, Minnesota on particular factors defined in our purpose statement. This chapter includes: an introduction, history of medical scribes, definition of a medical scribe, qualifications of medical scribes, medical scribe work environments, medical scribe role, the impact of scribes on patient satisfaction, provider attitude and value of medical scribes, the impact of scribes on overall patient volume, effect of implemented scribe program on hospital revenue, conclusion and knowledge gap.

History of Medical Scribes

The idea of scribes being used to record information has been utilized throughout history. Specific use of the scribe in medical settings has been anecdotally reported since the 1970's (ScribeAmerica, 2014). However, commercializing the medical scribe concept for national physician use began in 2003, when a program named ScribeAmerica reports they were able to demonstrate that the collaboration of the medical scribe/medical provider/electronic medical record (EMR) model could overcome productivity losses experienced by unassisted physicians using EMR (ScribeAmerica, 2014). Since the start of this program several other commercialized scribe programs have emerged in the United States, some of which include: Elite Medical Scribes, PhysAssist Scribes, and Emergency Physicians Professional Association (EPPA) scribes.

Definition of a Medical Scribe

Medical scribes are also known as clinical scribes, ER (emergency room) scribes, and ED (emergency department) scribes and are hired to act as personal assistants to medical providers as they interact and treat their patients (ScribeAmerica, 2014). They work under the supervision of their assigned health care provider and follow him or her through their work day and perform accurate documentation and charting in an electronic health record of physician-patient encounters in real-time during medical exams (Elite Medical Scribes, 2014). Medical scribes require specific qualifications for hire and are trained to work alongside and collaborate with physicians and advanced practice providers in a number of medical care settings (EPPA, 2011).

Qualifications of Medical Scribes

Typical candidates for medical scribe employment tend to be recent college graduates interested in pursuing a career as a physician or advanced practice provider (Elite Medical Scribes, 2014). This is a typical candidate due to both their interest and passion in the medical field as well as their previous education and experience. While no clinical experience is required to apply to a scribe position, most programs require two to four years of undergraduate education with emphasis in pre-medical studies and prefer a background in anatomy and physiology as well as medical terminology (EPPA, 2011). Being employed as a scribe does not require a specific medical certificate, registration, or licensure (EPPA, 2011). Instead, the scribe builds off of their previous knowledge and continuing educational base through intensive training programs lasting around 120 hours (ScribeAmerica, 2014). This education and hands-on, fast-paced, on the job training teaches the scribe critical thinking skills and the knowledge necessary to assist providers

with medical documentation (Elite Medical Scribes, 2014). Throughout the duration of a scribe's career they increase their skills further by building on their education and training, both from hands-on knowledge gained from work experience as well as regular reviews, assessments, and continuing education (Elite Medical Scribes, 2014). While the educational background of scribes can vary as long as it includes the above requirements, general core competencies are often essential for scribes. Some of these core competencies include, but are not limited to, the ability to learn and apply medical terminology, strong communication skills both verbal and written, strong ability to actively listen, ability to observe and to draft a narrative account of events accurately and logically, keyboard proficiency of approximately 70 words/minute, ability to efficiently operate a computer and in-depth software applications, ability to multitask and to work in a dynamic, highly-stressful environment that routinely involves exposure to highly-sensitive personal medical issues, as well as a commitment to having high ethical standards (EPPA, 2011).

Medical Scribe Work Environments

Scribes are utilized in a paradigm consisting of the scribe, the provider, and the EMR in a variety of medical environments, typically including emergency departments, inpatient hospital settings, and outpatient clinical settings (ScribeAmerica, 2014). These settings also include a multitude of different specialty areas: family and internal medicine, pediatrics, orthopedics, pain management, general surgery, neurosurgery, breast surgery, radiology, cardiology, dermatology, urology, oncology, ear/nose/throat, gastroenterology, obstetrics/gynecology, sleep medicine, ophthalmology, bariatric, and endocrinology (Elite Medical Scribes, 2014). These environments are typically fast-paced

departments with potential for demanding requirements. Collaboration with other members of the medical team is essential for the success of the scribes, medical team, and setting as a whole. The scribe is paired with a medical provider for the duration of an eight to ten hour shift (EPPA, 2011). Throughout this shift it is not uncommon for a scribe to also be interacting with patients, nurses, support staff, and other physicians or advanced practice providers.

Medical Scribe Role

A medical scribe's main function is to assist their assigned medical provider by managing the charting in the electronic health records of patients, intending to free the provider from clerical duties to allow them more time for direct patient care in an effort to consistently deliver efficient and quality care (EPPA, 2011). Scribes document a patient's history, physical examination, interactions the patient has with the provider, as well as any procedures, lab results, consultations, and other important medical findings in regards to the patient and their medical visit (Elite Medical Scribes, 2014). They can also generate referral letters for medical providers, provide updates to other medical care team members (such as registered nurses, radiology technicians, and medical assistants), and sometimes even assist with electronic prescribing of medications and medical order entries (Elite Medical Scribes, 2014). The scribe may not act independently but can document and carry out the previously determined medical provider's dictation and instructions (ScribeAmerica, 2014).

Medical scribes are expected to be professional and to take their role seriously, as they are an important part of the medical team, and thus, how they perform impacts the patients they are working to serve along with other medical providers. One national

medical scribe employer, ScribeAmerica, has a “Scribe Creed” outlining the responsibilities of a scribe and the expectation of the scribes they employ to take their role seriously. Each section of the creed corresponds to the letters of the word, “SCRIBE”. The creed reads,

> S: Scribes are part of the healthcare team; we have revolutionized the delivery and quality of patient care through innovation and excellence and have allowed providers to return to the patient's bedside. I am part of that team.
>
> C: Carrying a legacy, I realize this calling will ask much of me, whether it means putting in extra hours, dealing with stressful situations or encountering unfathomable circumstances. I will stand in solidarity with my scribe team and remain focused, caring, supportive, professional and enthusiastic.
>
> R: Recognizing the worth of my fellow scribes, I will regard the needs of others as I do my own. I will work effectively with my team, understanding success is reached together and not alone.
>
> I: Invested with high expectations, I firmly believe that my fellow scribes are a cut above the rest and I am committed to proving this true. I will dedicate 100% and then some. I will make my provider proud, my company proud, my teammates proud and myself proud.
>
> B: Bound by honor and integrity, I will uphold myself to the highest standard. I will respect the privacy of the patient, the experience and guidance of the provider, and the worth of my peers. Even in times of stress or adversity, I will do what is right at all times.

> E: Entrusted with a great responsibility, I will excel in my role as a scribe. I understand that I have been specially trained for a unique and critical role. The work that I do must be accurate and efficient. It's work that ultimately helps save lives. With that always in mind, I will respect those in authority and, when called upon, lead with humility, deference and honor (ScribeAmerica, 2014).

ScribeAmerica's company motto sums up the value they place on the role of the scribe, "Doctors Save Lives. Scribes Save Doctors" (ScribeAmerica, 2014).

In summary, the goal of medical scribes is to handle the data entry and management tasks for medical providers in real-time, in an effort to free providers to increase patient contact time and give more thought to intricate cases, better manage patient flow through the emergency department, and increase overall provider productivity to increase patient numbers and billable services (Elite Medical Scribes, 2014; EPPA, 2011; Scribe America, 2014).

Medical Scribes and Patient Satisfaction

Medical providers, as well as hospital and medical clinic administrators, are concerned with how satisfied their patients are and routinely make an effort to ask their patients how satisfied they are with the services provided and the medical care they received. Although there may be a number of reasons administrators of medical facilities may want to know how satisfied their patients are, the main reason is that they want these patients to return to their medical facilities and to their providers for continued growth of their department or facility and to maintain or increase revenue opportunities. Without the patients they serve, their revenue and administration job security would be negatively impacted. Many emergency room providers have aimed to please their patients by

making efforts to reduce their overall wait time to receive care in the emergency room, improve the organization of the patient's medical record, and to provide quality, accessible, and affordable care. With the implementation of the EHR at many medical facilities, many providers depend on medical scribes to help fill the gaps of provider knowledge of the new medical record system and the decrease the time for charting and documentation (Conn & Meyer, 2013). If scribes are helping providers do their job more efficiently and timely, then the use of scribes may have an impact on overall patient satisfaction.

Two recent studies were conducted and published in 2013 and 2014 and concluded that the utilization of a scribe program had a positive impact on overall patient satisfaction with their medical care visit. One study was conducted by Beaumont Health Systems Emergency Department in Troy, Michigan after identifying the detrimental effect of their computerized physician order entry (CPOE) program and electronic health record (EHR) documentation on throughput time and patient satisfaction in their department. They conducted a pilot program using scribes in the emergency department of their Michigan suburban community hospital and compared patient satisfaction values before the implementation of the EHR and CPOE systems, after implementation of the EHR and CPOE systems, and then again after the implementation of a scribe program to assist physicians with managing EHR and CPOE systems. Baseline patient satisfaction data was collected before the implemented health records systems, as well as before the pilot scribe program started, to standardize their data collection conditions (Bastani, Shaqiri, Palomba, Bananno, & Anderson, 2014). They utilized satisfaction scores from Press Ganey surveys and implemented a scribe program using a recognized scribe

program, PhysAssist, to employ, train, manage, and schedule the scribes utilized (Bastani, et.al, 2014). The purpose of the study was to see if the implementation of an EHR and CPOE system would have an impact on overall patient satisfaction and whether or not the further implementation of a medical scribe program would help restore or improve their patient satisfaction numbers. They discovered that there is a definite burden both the EMR and CPOE impose on the emergency department and that after these two systems were implemented their patient satisfaction level went from 75% to 58%. However, after implementing the scribe program to help assist providers with managing these systems, so providers could focus more on patient interactions and treatment, their patient satisfaction values were 72%, close to the original values (Bastani, et.al, 2014).

Researchers found similar results in a study regarding patient satisfaction within a cardiology clinic, United Heart and Vascular Clinic, based out of St. Paul, Minnesota. Clinic providers identified barriers to providing efficient, effective, and timely patient care after the implementation of an electronic medical record within their clinic (Bank, et.al, 2013). The providers knew from previously collected patient satisfaction data that their baseline patient satisfaction was already really high for this particular clinic. The goal was to implement a scribe program to assist the providers so that their patient satisfaction would not decrease as a result of the implementation of the electronic medical record (Bank, et.al, 2013). They utilized current emergency department scribes with more than six years of previous experience from a professional scribe services corporation, Emergency Care Consultants, to participate in their study. They had providers utilize scribes on randomly selected days and compared patient satisfaction surveys to the days when scribes were not utilized. They found that their overall patient

satisfaction was very high on control days, and remained high and unchanged on scribe days (Bank, et.al, 2013). Therefore, the implementation of the scribe program did not disrupt this clinic's flow of providing services and they were able to maintain their high patient satisfaction. Interestingly though, the study showed that the average office visit was 37% shorter when a scribe was utilized compared to when a scribe was not present. Despite the reduced physical provider time in the patient room, the time spent in direct patient interaction (without using the computer) was over four times greater when a scribe was assisting the provider during the medical visit (Bank, et.al, 2013). Overall quality of the physician-patient encounter (as rated by an experienced performance improvement manager) was significantly better when there was a scribe (9.1/10 rating average) compared to when a scribe was not utilized (7.9/10 rating average) (Bank, et.al, 2013). Patients commented to clinic staff about the benefit of having the physician's full attention without distraction from the computer and stated that they felt that they were seen in a more timely fashion when scribes were assisting their provider (Bank, et.al, 2013).

Although in both of the above studies an implemented scribe program showed positive impacts on patient satisfaction, the impact of scribes on patient satisfaction is a relatively new area of study. There has been limited research conducted and most of the research available has been recently conducted in the past few years, as in the case of the above-mentioned studies. The cardiology clinic study was one of the first studies to evaluate the use of scribes in a clinic setting pertaining to patient satisfaction and time spent in direct interaction with patients (Bank, et.al, 2013). Although scribes have been around for a few decades in various settings, the newer question of how an implemented

scribe program impacts patient satisfaction seems likely attributed to the implementation of the EHR and other electronic based medical programming at many facilities. As facilities work to identify potential patient care barriers with the use of the new electronic systems, questions may arise about whether the implementation of a scribe program would help either improve or maintain their patient satisfaction values. The decision for facilities to implement a scribe program may be especially difficult due to the limited research data to base a decision from (Arya, et al., 2010). Our research will offer additional insight into how scribe programs impact patient satisfaction in emergency rooms, which may in turn assist facilities in their decision of whether a scribe program would benefit their facility and their patients.

Provider Attitude and Value of Medical Scribes

Medical scribes have been around for many years in various capacities and their use thought to be of some benefit to the providers and the patients they work with, yet still not all hospitals and medical facilities have implemented scribe programs (Guglielmo, 2006). The reasoning may be because there are differing of opinions regarding the advantages and disadvantages of the use of scribes (Guglielmo, 2006).

A study conducted decades ago that evaluated emergency department patient flow with the use of a scribe system was one of the first to assess the use of scribes in the medical field. They implemented a scribe system in 1975 after noticing an increase in patient volume in their emergency room. Prior to this system they relied more heavily on nursing staff to assist the physicians and practitioners with clerical duties, which was the accepted protocol during this time period (Allred & Ewer, 1983). They were one of the first to not only implement a non-nurse scribe system, but were one of the first to publish

the advantages and disadvantages of a scribe program within a hospital. The advantages were that the scribe system provided an accurate, legible medical record (as records were handwritten during that time) without lag time and that the physicians had more time to spend in direct communication with the patients (Allred & Ewer, 1983). The disadvantages they cited were that some saw the scribes as a barrier between the physician and the nurses, with the nurses tending to not assist or accompany the physician during patient encounters or procedures as often post scribes. Researchers noted that the nurses felt more disconnected from the physicians due to the close working relationship between the scribe and the physician. They also noted that some patients did not understand the role of the scribe and thought they were nursing staff. Researchers noted the importance of scribes to wear uniforms and nametags to identify themselves to patients and to appear professional, as well as the importance for scribes to maintain a passive role throughout the patient encounter to reduce patient confusion (Allred & Ewer, 1983).

Allred and Ewer (1983) evaluated the scribe program for five years prior to publishing their data and they concluded that the scribe system was invaluable and an integral part of the emergency department operation. Despite some initial challenges during the transition the program was cost-effective, provided a prompt and accurate medical record, and was liked more by the providers compared to dictation-transcription systems or nurse-scribe methods (Allred & Ewer, 1983). Even before the utilization of electronic health records providers have seen the benefits of scribes and how they play an important role in overall provider satisfaction. The researchers wanted to share their

experience with other medical professionals in an attempt to inform others how they too could have a superior scribe program (Allred & Ewer, 1983).

More current research has supported the idea that medical providers generally value the utilization of scribes. According to a study where provider job satisfaction was measured via surveys considering the implementation of an electronic health record, only 19% were satisfied with their job and performance when a scribe was not in use, compared to 69% being satisfied with their job with the use of a scribe (Verdon, 2014). Many providers have expressed that not only do their patients seem to like scribes because the provider is freed up to focus more on the patient and their care, but that the providers feel that using scribes frees them up to do other patient care related tasks opposed to documentation (Guglielmo, 2006). Furthermore, other providers have stated that the use of scribes in their facilities have shown positive financial implications, as providers are able to complete more billable tasks when scribes are working with them. Many providers appreciate the versatility of scribes, as they can be hired to fulfill a wide range of duties under the physician's approval and credentials (Guglielmo, 2006).

However, some providers may agree with the early findings of Allred and his colleagues (1983) in that they feel that the use of scribes causes a barrier between nursing staff and the provider, as the provider may not rely on or communicate with the nursing staff as often when they utilize a scribe (Guglielmo, 2006). Some providers still see the limitations of scribes and view the use of scribes as a "shortcut" to treating the patient and fear that medical providers may miss the overall depiction of a patient's health, care, and treatment options since they are not independently preparing the documentation (Guglielmo, 2006). In addition, some providers and medical staff feel scribes are "in the

way" or "taking their duties" away from them (Guglielmo, 2006). If providers and other medical staff view the use of scribes as a barrier and limiting their ability to complete their job effectively, having a scribe system in these situations could negatively impact the overall patient experience and care, as well as provider efficiency. As more research and studies evaluating the benefits and limitations of a scribe program are conducted, the more informed providers and other medical staff will become when forming their opinions on scribe systems. Our research will be evaluating the above further in hopes to offer this essential insight.

Medical Scribes and Patient Volume

Due to the increasing demands of EMRs on physicians and advanced practice providers, provider productivity is of huge concern. Hospitals who use EMRs take on average 30% longer to chart compared to paper charting (Verdon, 2014). Physicians also report spending on average eight to ten minutes per patient's EMR chart, taking up 25% of the providers time now spent on a non-clinical task (Verdon, 2014). Proper documentation is still very important and a significant drop in provider productivity is undesirable. One of the intended uses of scribes has been noted to be increased provider productivity, ultimately allowing them to do a more efficient and productive job while seeing patients. Increased productivity can have an effect on the number of patients a provider is able to see. Hospital administration often desire increased patient volume for continued growth of their system and to increase revenue for the medical system.

Two recent studies show the impact of implemented scribe programs on provider productivity and subsequent patient volume. A study published in 2013 examining provider productivity in an outpatient cardiology clinic, both with and without an

implemented scribe program, showed the effect their scribe program had on physician productivity. Within 65 clinic hours, four physicians each saw an increase of 81 more patients with the implemented scribe program, showing an overall increase in the volume of patients seen (Bank, et. al, 2013). A sub-study of this research showed that direct patient contact time was shorter with the scribe program, meaning that visit lengths were shorter (Bank, et. al, 2013). However, time of patient interaction without the computer was greater, meaning provider-patient interaction was higher on visits that included the scribe (Bank, et. al, 2013). Another study from the American College of Emergency Physicians, showed reduced provider charting burdens, increased ED volume, and increases in provider productivity when scribes were used. In addition, the study showed a relative reduction in time spent charting by 36%. This freed the provider up to be more productive, an average increase in relative value units (RVU's) per patient of 5.5%. As the provider was more productive, they were able to increase patient volume by 88 patients per day (Hess, et al., 2013).

Another study examined throughput time in the ED before and after EHR use, as well as before and after scribe program implementation. Throughput time was measured prior to EHR use, post-EHR and pre-scribe, and post EHR with implementation of a scribe program. Throughput time was further broken down into door-to-room time, room-to-doc time, door-to-doc time, doc-to-disposition time, and length of stay for discharged/admitted patients. The study results showed an increase (worsening) in all throughput measure times once EHRs were implemented. The study further revealed an improvement in all throughput measures with an implemented scribe program; many of the measures were improved even beyond the pre-EHR times (Bastani, et. al, 2013). One

specific throughput measure showed the change in doc-to-admit/disposition time. Doc-to-admit/disposition time increased from 231 minutes pre-EHR, to 237 minutes post-EHR (and pre-scribe program), then decreased to 185 minutes post-EHR with an implemented scribe program (Bastani, et. al, 2013). This study shows the increased time required by providers and subsequent decreased patient numbers that medical facilities are facing with the addition of required EHRs. An implemented scribe program in this situation was proven to be beneficial by decreasing patient throughput time, thus allowing increased patient numbers.

Implemented Scribe Program and Hospital Revenue

With an increase in patient volume and provider productivity there should be a correlated rise in hospital revenue. Twenty-one pecent of health expenditures in the United States are composed of physician services (Hartman, Martin, McDonnell, Catlin, 2009). Changes that improve productivity and patient volume of a provider, without impairing patient quality, will have financial benefits to the healthcare system that employs the provider.

At Tri-City Medical Center in California their implemented emergency department scribe program saved them $600,000 in the first year alone, which is usually the most expensive year due to training costs (Emergency Department Management, 2009). This same study also showed a ten percent increase in billing per provider per hour (Emergency Department Management, 2009). Another study in a large cardiology clinic also supported this conclusion. Their data showed that there was $205,740 additional revenue generated from just the addition of 81 extra visits the providers were

able to see as a result of utilizing a scribe during the course of the study (Bank, et. al, 2013).

Another study on the impact of scribes on performance indicators in the ED showed some improvements with scribe implementation but no improvement in turn around time to discharge. This research evaluated patients treated per hour, relative value units (RVUs), and turn around time to discharge. While results showed no improvement of the turn around time it did show an increase of 0.24 RVUs for every 10% increase in scribe usage (Arya, et. al, 2010). Results also showed a 0.8 increase of patients per hour for every 10% increase in scribe usage (Arya, et. al, 2010). So even though there was no improvement of the throughput time in this study, there was still an increase in the number of patients seen and relative value units generated. The study noted that based off of the 2008 Medicare RVU reimbursement rate of $38 for one RVU and full utilization of a scribe program, creating an increase of 2.4 RVUs per hour, could result in an extra $91 per hour (Ayra, et. al, 2010). The financial benefit of the scribes use will be dependent on the amount an institution is employing their scribes for "[…] unless an institution collects less than 30% of their billed revenue, scribes may be expected to improve the financial 'bottom line'" (Ayra, et. al, 2010).

There are many variables that go into hospital revenue and bottom line. The previously discussed studies demonstrate a positive effect of scribe use on hospital revenue. A complete cost analysis for each individual institution should be taken into consideration due to the variability of the institutions current revenue, costs of training, salary versus non-salary benefits, current patient volume, and individual differences.

Conclusion and Knowledge Gap

Based upon the limited research available, a positive correlation is seen between implemented scribe programs in medical settings on patient satisfaction, as well as the number of patients a provider is able to see, subsequently having positive financial implications on hospital revenue. Furthermore, mixed provider opinions exist regarding the value of the function and role of scribes despite the above positive findings.

Due to the limited research available supporting the benefits of implementing a scribe program and the mixed opinions providers have regarding the issue, a lack of consensus exists on scribe program utilization and a gap remains for many medical providers and administrators. By gaining more sufficient data to help fill this gap, facilities will be better equipped to make more informed and cost effective decisions pertaining to their providers and patients.

In conclusion, additional research conducted on how scribe programs impact medical facilities and their patients, is beneficial, which our study will contribute towards. However, further research exploring alternative methods medical facilities could employ in place of a scribe program to increase patient satisfaction, provider effectiveness, and improved financial gains, could prove useful.

CHAPTER 3: Methodology

Introduction

The purpose of this study was to evaluate the perceived value by emergency room medical providers of scribe programs in emergency room settings as to the scribe role, as well as the impact of scribe utilization on patient satisfaction, patient volume, and cost-effectiveness. Specifically, this study addressed and analyzed provider viewpoints regarding the following questions.

1. How is emergency room patient satisfaction affected when a physician group has an implemented scribe program?
2. What value do emergency room providers place the function and role of scribes in an emergency room setting?
3. How does the utilization of a scribe program impact overall patient volume of an emergency room?
4. How does an implemented emergency room scribe program impact the cost effectiveness of an emergency room?

This chapter includes the following information: study design, study subject variables, population, instrumentation, validity and reliability, procedures, data analysis, and limitations/delimitations.

Study Design

This research project was a prospective, quantitative study assessing the value emergency room providers place on the function and role of scribes in an emergency room setting. Emergency department providers opinions regarding how an implemented scribe program impacts overall patient satisfaction, average patient volume, as well as

changes in the amount of provider billable service was gathered through a web-based questionnaire, accessed via a hyperlink received through an e-mail from a predetermined EPPA representative.

Study Subject Variables

This study assessed current emergency room provider attitudes regarding how the independent variable of the presence of an implemented emergency room scribe program impacts the three dependent variables of perceived overall patient satisfaction, provider's overall job satisfaction, as well as their perceived productivity including average number of patients seen per shift and number of billable services completed per shift.

Population

Our population consisted of EPPA emergency room providers. In order to assess a large group of providers in an expedient manner, EPPA agreed to facilitate a mass e-mail request to all EPPA emergency room providers to participate in the survey (Appendix A). EPPA emergency departments where the providers worked included: Allina Mercy Hospital in Coon Rapids, MN, Allina Unity Hospital in Fridley, MN, Fairview Ridges Hospital in Burnsville, MN, Fairview Southdale Hospital in Edina, MN, Park Nicollet Methodist Hospital in Saint Louis Park, MN. There are approximately 150 providers working in EPPA emergency rooms and a conservative response rate of 33% was expected.

Instrumentation

All respondents were given an informed consent prior to participating (Appendix B). The questionnaire used in this study consisted of eleven questions divided into two sections (Appendix C). The first section assembled demographic information including:

years worked as an emergency room provider, years worked with emergency room scribes, and provider age. The second section of the questionnaire included eight reflective statements measured on a five point Likert scale (1-Strongly disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly agree). Respondents replied with agreement or disagreement to statements concerning attitudes towards the value of scribes in emergency room settings. This section included the following questions:

1. My patients are more satisfied with their emergency care services when I utilize a scribe.
2. I am able to spend more face-to-face time with patients when I utilize a scribe.
3. Scribes help to reduce my overall clerical/documentation duties per shift.
4. On average the utilization of scribes help me to see more patients per shift compared to when I haven't used a scribe.
5. On average scribes help me to perform more billable medical services per shift compared to when I haven't used a scribe.
6. I feel more satisfied with my overall job performance when working with a scribe.
7. I enjoy my job as an emergency room provider more when working with a scribe.
8. Emergency rooms with implemented scribe programs function more efficiently.

Validity and Reliability

A panel of individuals, including emergency room providers, a scribe program director, as well as a research analyst and two research professors, experienced in data collection and survey instrumentation reviewed the questionnaire before it was distributed. Our study design directly evaluated our four research questions through a data collection process of surveying current emergency room providers from hospitals

with implemented scribe programs. All data collected from the hospitals, via the surveys, was securely stored in statistical software programs throughout the duration of the study and then onsite at Bethel University upon completion of the study for future reference and potential study reproducibility. All data obtained was confidential with no patient or provider identifying factors.

Procedure

During fall of 2015, questionnaires were accessed by EPPA providers via e-mail from a predetermined EPPA representative, with a hyperlink to Survey Monkey. Along with each questionnaire, a cover letter was attached to the e-mail. Each EPPA provider was sent a reminder via e-mail 14 days after the sending of the original e-mail (Appendix D). The reminder e-mail was intended to increase response rates. Questionnaires continued to be accepted three weeks after the original date of sending out the surveys. Institutional Review Board (IRB) approval was obtained prior to data collection (Appendix E).

Data Analysis

All data obtained from the questionnaires was entered, stored, and analyzed in statistical software program SPSS (Statistical Package for the Social Sciences). Data was sorted and conclusive statistical analysis tests was completed using the above statistical software program. Numeric statistical data was compiled into graphs, tables, and charts. The data was quantitative and categorical. The data obtained from the eight-question provider questionnaire was analyzed using correlation and comparison of means. Specifically, the provider response of the overall value and effectiveness they perceive of

scribes was analyzed by comparing mean overall scores to a Likert scale. To determine if one parameter was more important than another, a correlation analysis was performed.

Limitations and Delimitations

Only one emergency room provider group was surveyed, which could have limited the generalization of our results and could limit the total number of providers surveyed. Furthermore, there may have been a survey response bias that could occur with providers who chose to respond representing a sub-set of providers with differing opinions compared to those providers who did not choose to respond.

Researchers have prior employment history with the utilized emergency room provider group being surveyed and some of the participating hospitals. This could have impacted participation and ratings by providers. Given that both researchers are former emergency room scribes, researchers used a representative to distribute and collect all data for the study in an effort to minimize any biases or skewing of the data.

CHAPTER 4: Results

Introduction

This chapter will examine and explain the data collected from the SurveyMonkey online survey. Each question on the distributed online survey was individually examined and is discussed in this chapter. Statistical Package for the Social Sciences (SPSS) software program was used to analyze the results from the study. Table and Figures are used the display the data analyzed.

Our results were collected and then analyzed via the SPSS program. Tables and figures are provided to demonstrate the findings. Thirty-eight percent of the providers from EPPA participated in the study within the preset time limitation, which was more than one-third of the providers invited to partake in the online survey. Three demographic questions were analyzed and then an additional eight questions on a 5 point Likert scale were analyzed. The data presented above demonstrates the findings from our overall study and are deemed valid and reliable.

Data Analysis

Research personnel collaborated with Emergency Physicians Professional Association (EPPA), who agreed to distribute the survey to emergency room providers, which included approximately 150 physicians and advanced practice providers. Of those, 57 responded within the three week timeframe, a response rate of 38%, which exceeded our conservative expected response rate of 33%.

The demographic data collected allowed us to obtain an overall idea of the provider population surveyed within the EPPA group. The mean average age of providers was between 40-49 years old with the maximum response being 60 years old or older and

the minimum response being under 30 years old (Figure 1). The mean average years worked as an emergency provider was 12 years with the maximum response being 33 years and the minimum response being 2 years. The mean average years of how many years the provider worked with an emergency room scribe was 4 years with the maximum response being 10 years and the minimum response being less than one year.

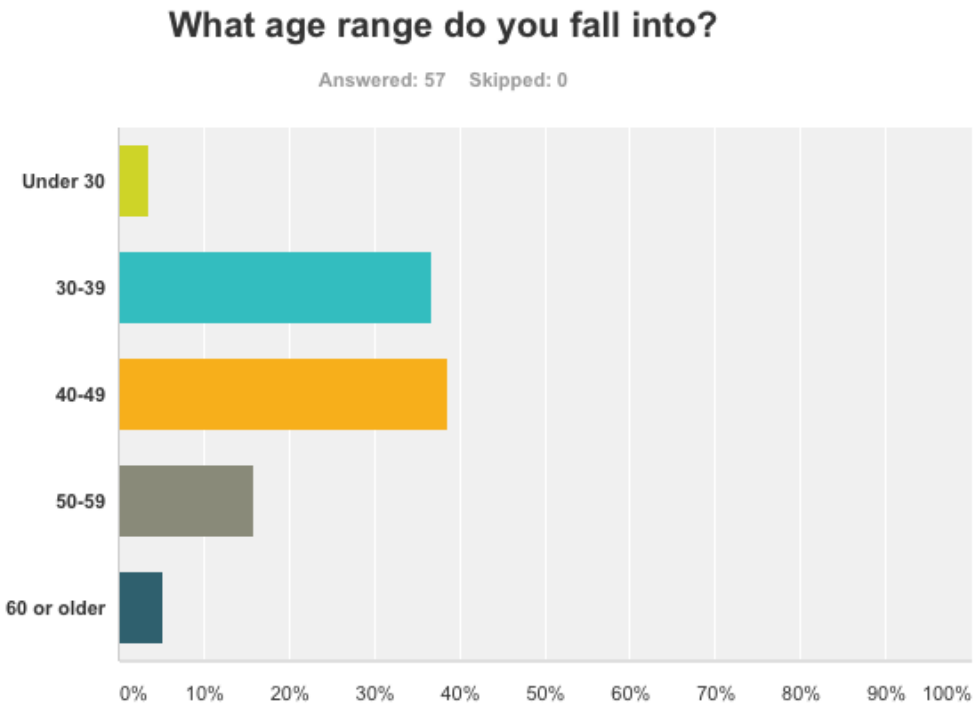

Figure 1: Response frequencies for response age for providers

Evaluation of the mean response for each of the eight reflective survey questions on a five point Likert scale (1-Strongly disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly agree) was completed (Table 1). For the question, “My patients are more satisfied with their emergency care services when I utilize a scribe”, the mean response was 3.67. For the question, “I am able to spend more face-to-face time with patients when

I utilize a scribe", the mean response was 4.23. For the question, "Scribes help to reduce my overall clerical/documentation duties per shift", the mean response was 4.44. For the question, "On average the utilization of scribes help me to see more patients per shift compared to when I haven't used a scribe", the mean response was 4.09. For the question, "On average scribes help me to perform more billable medical services per shift compared to when I haven't used a scribe" the mean response was 3.79. For the question, "I feel more satisfied with my overall job performance when working with a scribe", the mean response was 4.40. For the question, "I enjoy my job as an emergency room provider more when working with a scribe", the mean response was 4.44. For the question, "Emergency rooms with implemented scribe programs function more efficiently", the mean response was 4.23. Frequencies of responses for each question were also noted and are shown in Figures 2-9.

8 Reflective Survey Questions	N	Minimum Score	Maximum Score	Mean Score	Std. Deviation
Patient Satisfaction	57	1	5	3.67	1.024
Face to Face Time	57	1	5	4.23	1.035
Clerical Duties	57	1	5	4.44	1.086
Throughput Time	57	1	5	4.09	1.023
Billable Services	57	1	5	3.79	1.292
Job Performance	57	1	5	4.40	1.067
Enjoyment	57	1	5	4.44	1.053
Efficiency	57	1	5	4.23	1.086

Table 1: Descriptive Statistics with response means and standard deviations of the eight reflective survey questions measured on a five point Likert scale.

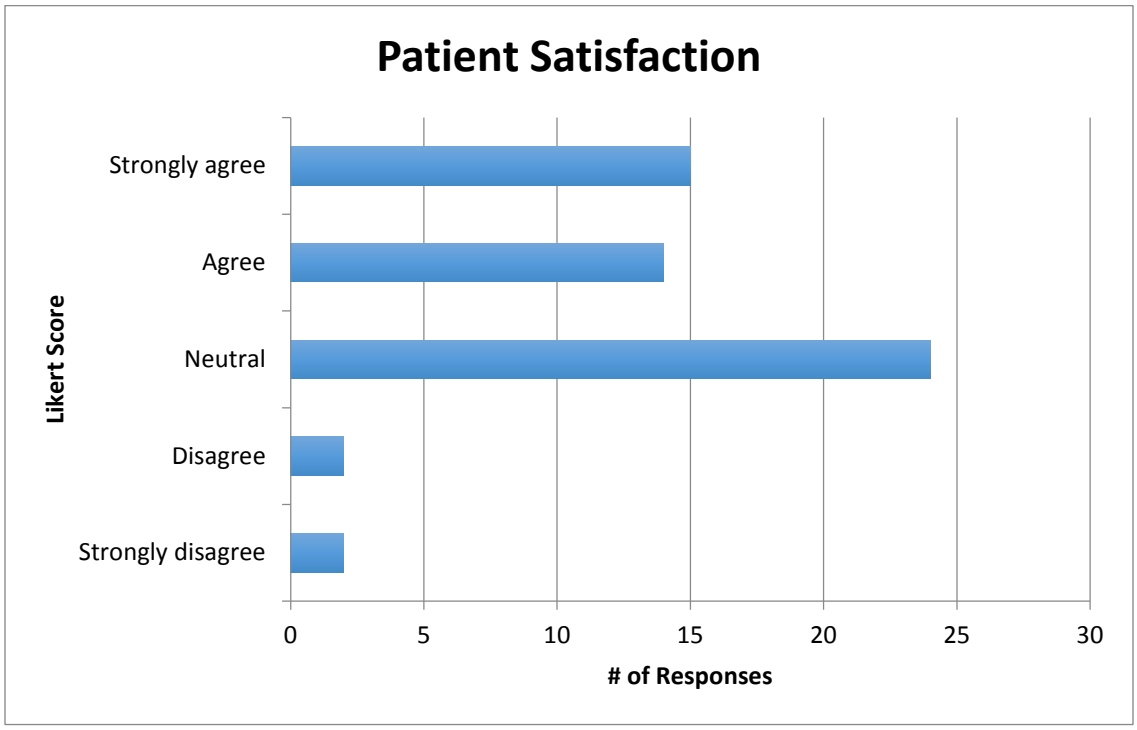

Figure 2: Response frequencies for "My patients are more satisfied with their emergency care services when I utilize a scribe."

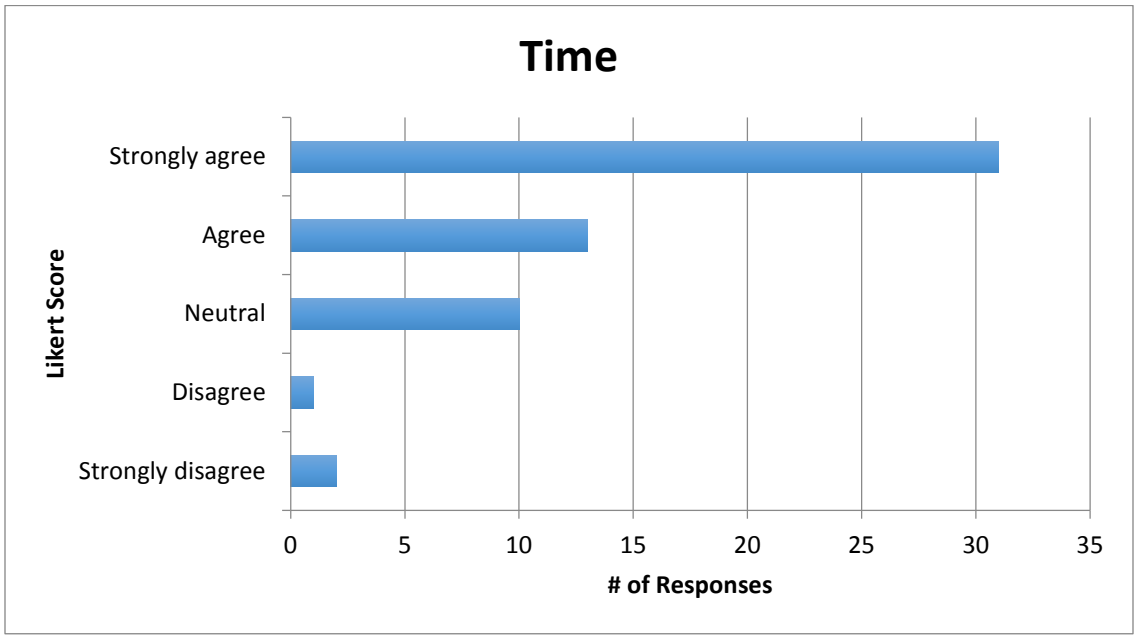

Figure 3: Response frequencies for "I am able to spend more face-to-face time with patients when I utilize a scribe."

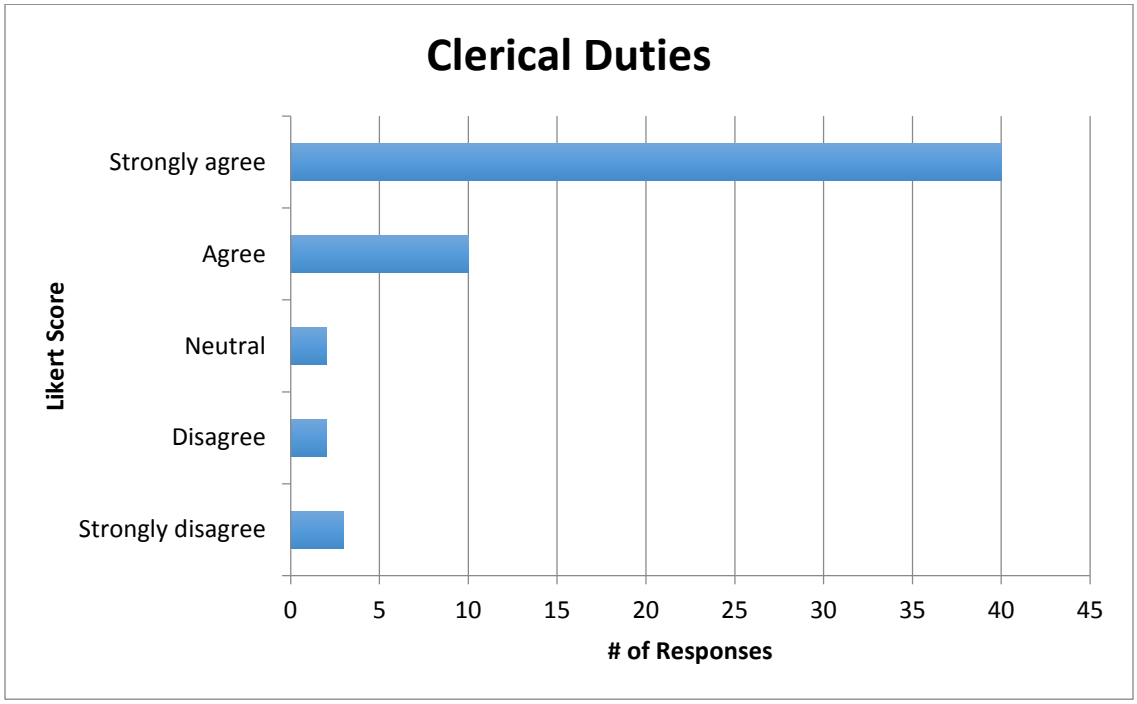

Figure 4: Response frequencies for "Scribes help to reduce my overall clerical/documentation duties per shift."

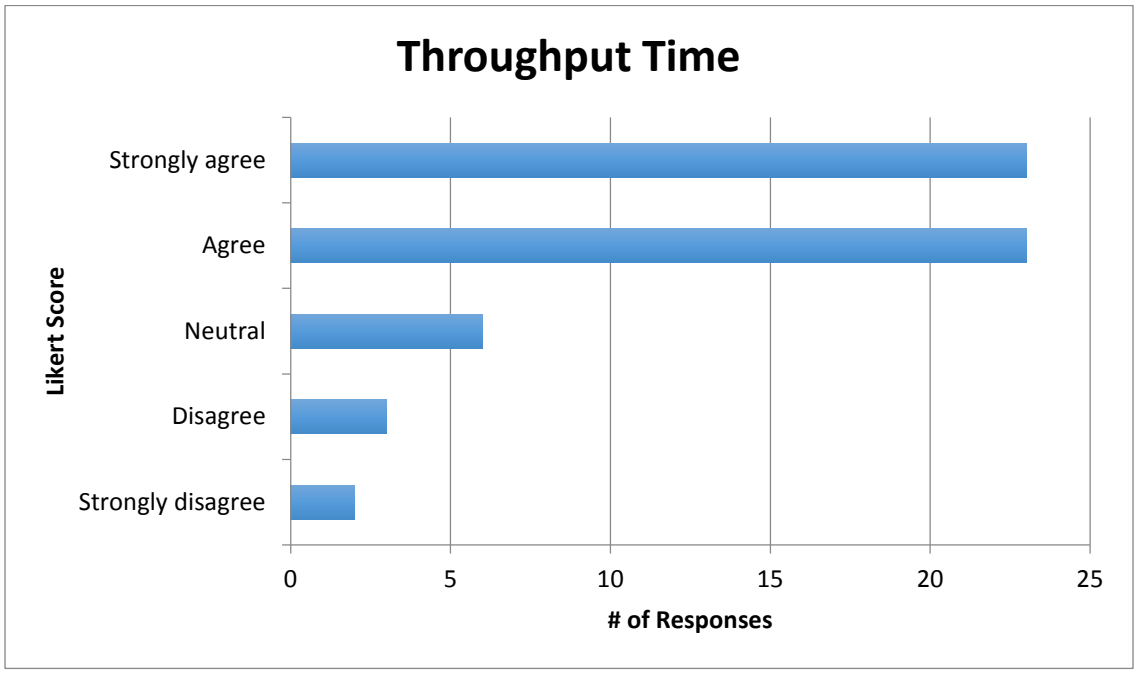

Figure 5: Response frequencies for "On average the utilization of scribes help me to see more patients per shift compared to when I haven't used a scribe."

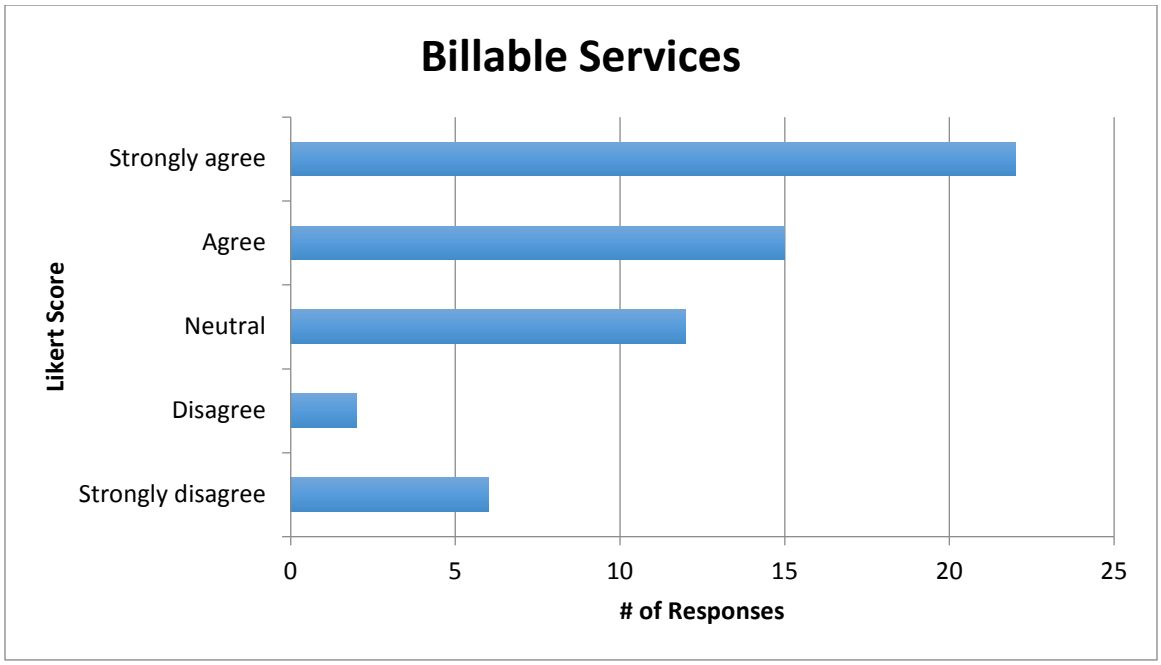

Figure 6: Response frequencies for "On average scribes help me to perform more billable medical services per shift compared to when I haven't used a scribe."

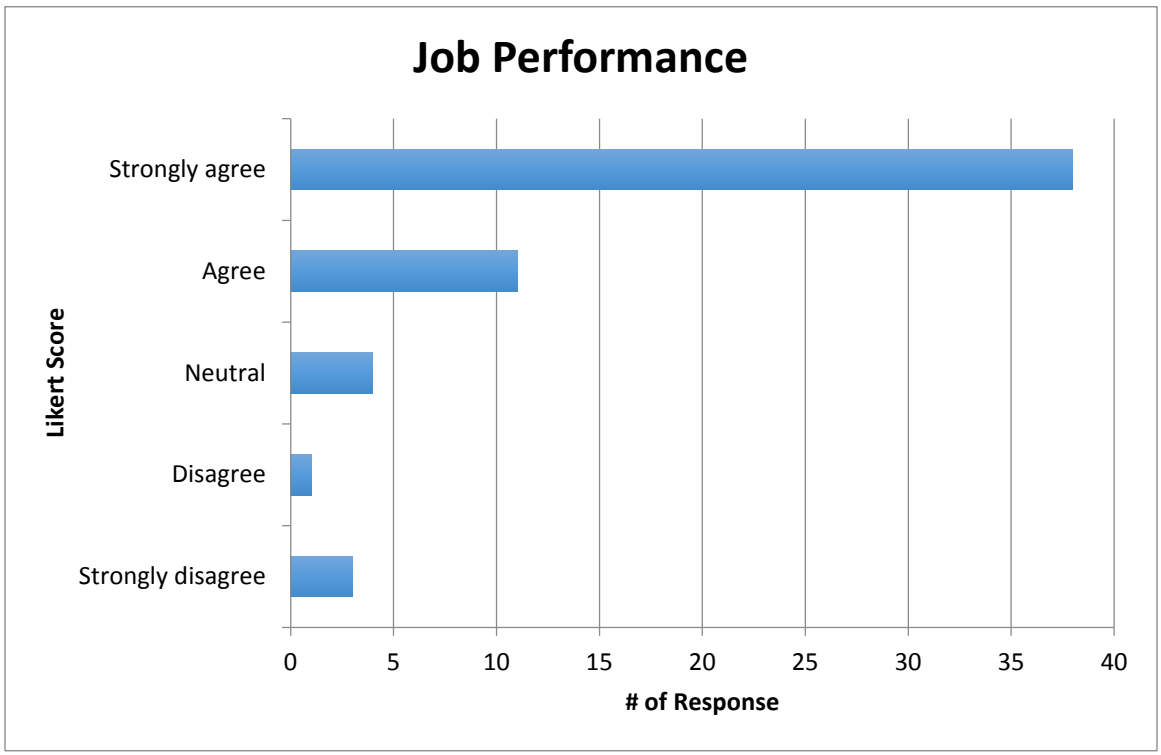

Figure 7: Response frequencies for "I feel more satisfied with my overall job performance when working with a scribe."

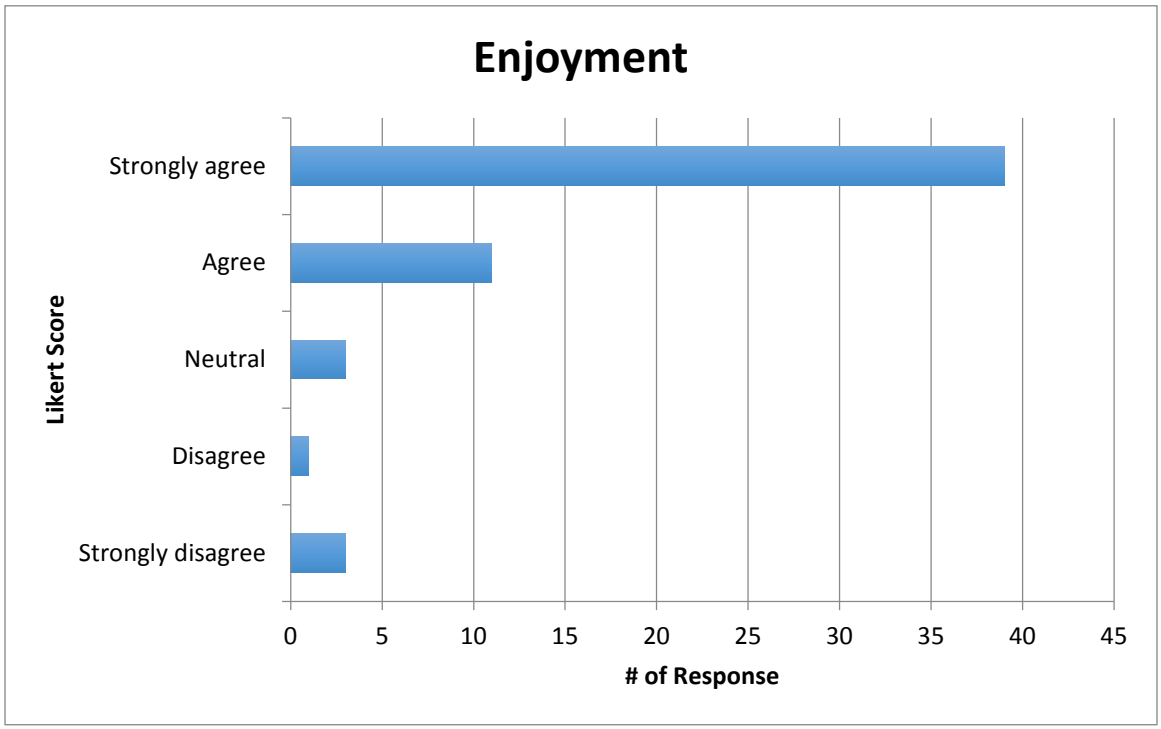

Figure 8: Response frequencies for "I enjoy my job as an emergency room provider more when working with a scribe."

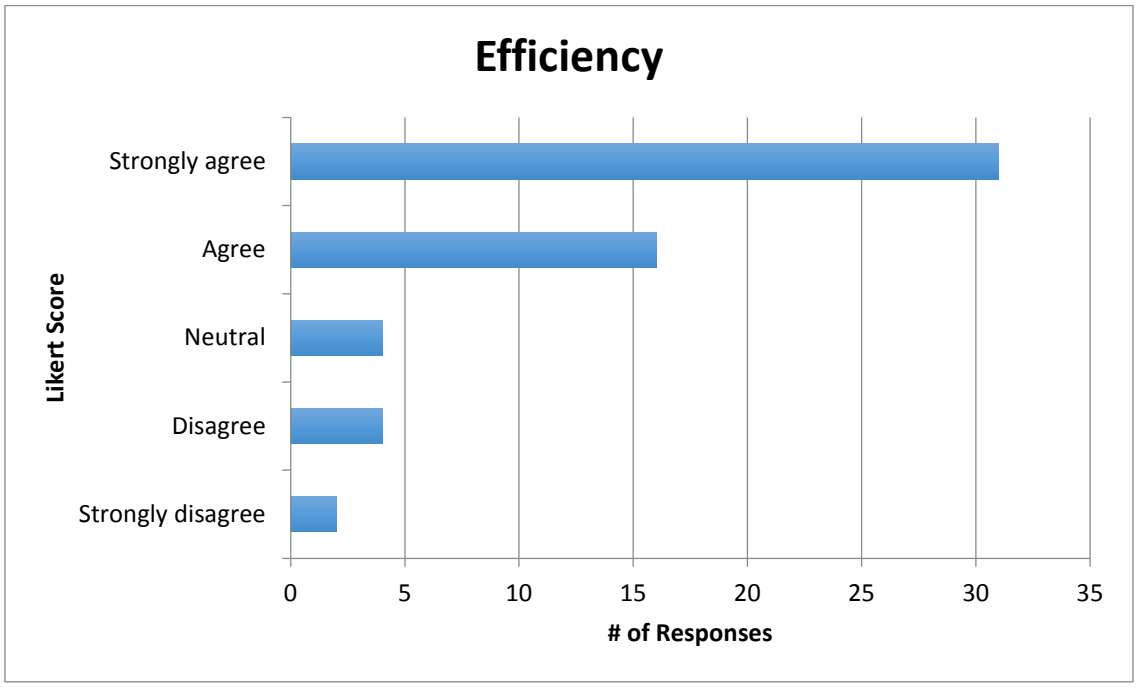

Figure 9: Response frequencies for "Emergency rooms with implemented scribe programs function more efficiently."

The correlation between the responses for each reflective survey question was analyzed and is outlined in Table 2. The strongest correlations among the eight survey question responses are as follows. Provider time with patients (survey question #2) was most strongly correlated with provider efficiency (survey question #8) at 0.953 (r^2 = 0.908). A reduction in provider clerical duties (survey question #3) was most strongly correlated with provider job enjoyment (survey question #7) at 0.985 (r^2 = 0.970). Number of patients seen/throughput time (survey question #4) was most strongly correlated with provider billable services (survey question #5) at 0.933 (r^2 = 0.870). Provider billable services (survey question #5) was most strongly correlated with number of patients seen/throughput time (survey question #4) at 0.933 (r^2 = 0.870). Provider satisfaction with job performance (survey question #6) was most strongly correlated with provider job enjoyment (survey question #7) at 0.985 (r^2 = 0.970). Provider job enjoyment (survey question #7) was most strongly correlated with a reduction in provider clerical duties (survey question #3) and provider satisfaction with job performance (survey question #6) at 0.985 for both (r^2 = 0.970). Provider efficiency (survey question #8) was most strongly correlated with provider time with patients (survey question #2) at 0.953 (r^2 = 0.908). Patient satisfaction (survey question #1) was most strongly correlated with provider time with patients (survey question #2) at 0.848 (r^2 = .719).

		Time	Clerical Duties	Throughput Time	Billable Services	Job Performance	Enjoyment	Efficiency	Patient Satisfaction
Time	Pearson Correlation		.878**	.908**	.891**	.901**	.890**	.953**	.848**
	N	57	57	57	57	57	57	57	57
Clerical Duties	Pearson Correlation	.878**		.881**	.869**	.970**	.985**	.913**	.712**
	N	57	57	57	57	57	57	57	57
Throughput Time	Pearson Correlation	.908**	.881**		.933**	.884**	.876**	.930**	.847**
	N	57	57	57	57	57	57	57	57
Billable Services	Pearson Correlation	.891**	.869**	.933**		.892**	.870**	.926**	.837**
	N	57	57	57	57	57	57	57	57
Job Performance	Pearson Correlation	.901**	.970**	.884**	.892**		.985**	.921**	.747**
	N	57	57	57	57	57	57	57	57
Enjoyment	Pearson Correlation	.890**	.985**	.876**	.870**	.985**		.911**	.735**
	N	57	57	57	57	57	57	57	57
Efficiency	Pearson Correlation	.953**	.913**	.930**	.926**	.921**	.911**		.825**
	N	57	57	57	57	57	57	57	57
Patient Satisfaction	Pearson Correlation	.848**	.712**	.847**	.837**	.747**	.735**	.825**	
	N	57	57	57	57	57	57	57	57

**. Correlation is significant at the 0.01 level (2-tailed).

Table 2: Correlation between responses for each reflective survey question

CHAPTER 5: Discussion

Introduction

In this chapter the findings of the study are discussed. We explore the limitations that were encountered during the data collection portion of the study, as well as discuss recommendations for potential improvement for the method, design, or data collection portions of the study. Potential future research opportunities are also explored. Lastly, a detailed conclusion is provided to conclude data analysis and research study findings.

Findings

The findings of this study aimed to answer the initial research questions of how emergency room patient satisfaction is affected when a physician group has an implemented scribe program, what value emergency room providers place on the function and role of scribes in an emergency room setting, how the utilization of a scribe program impacts the overall patient volume of an emergency room, and how does an implemented scribe program impact the cost effectiveness of an emergency room.

The demographic data collected allowed us to obtain an overall idea of the provider population surveyed within the Emergency Physicians Professional Association (EPPA) group, including average age of provider, the average years worked as an emergency room provider, and the average years the provider worked with an emergency room scribe. All of the providers who responded to the survey indicated that they had worked with scribes and therefore could reliably answer the survey questions based on their personal and direct experience with emergency room scribes.

The response mean for each question surveyed on a five point Likert scale was at least a “3” or higher, indicating the response mean for each survey question was

significant for a rating that the providers generally "agreed" or "strongly agreed" with the survey statement. This indicates that providers generally felt that scribes had a positive impact and value on patient satisfaction, provider face to face time with patients, provider efficiency, reduction in provider clerical duties, provider job enjoyment, number of patients seen/throughput time, provider billable services, and provider satisfaction with job performance.

The correlation analysis between each surveyed variable indicated that there was at least one highly significant correlation with one other variable being surveyed, with an r^2 value being at least 0.7 between the two variables. Provider time with patients was most highly correlated with provider efficiency, which likely is due to the fact that scribes enable the provider to be more efficient, thus being able to spend more time with their patients. Reduction in provider clerical duties is most strongly correlated with provider job enjoyment, which likely is due to scribes performing much of the clerical duties required by the emergency room providers, which many providers per our literature review cite as a source of job stress. Number of patients seen/throughput time is most strongly correlated with provider billable services, which would seem reasonable given that if providers are able to see more patients with the utilization of scribe assistance, they would thus be performing more billable services with a scribe. Provider billable services is most strongly correlated with number of patients seen/throughput time, which again is reasonable given that if providers feel that they are able to complete more billable services with the use of scribes, that they most likely felt that they are able to see more patients in a given amount of time. Provider satisfaction with job performance is most strongly correlated with provider job enjoyment, which would be

reasonable that if a provider was more satisfied with their ability to complete their job duties when utilizing a scribe, that they would enjoy their jobs more as well. Provider job enjoyment was most strongly correlated with both a reduction in provider clerical duties as well as provider satisfaction with job performance, indicating that if a provider felt that a scribe helped to reduce their clerical duties that they would be more satisfied with their overall job performance, as well as enjoy their job more. Provider efficiency was most strongly correlated with provider time with patients, which if a provider felt that a scribe enabled them to be more efficient at their job, they would in turn be able to see more patients. Finally, patient satisfaction was most strongly correlated with provider time with patients, which would be reasonable that if providers felt that scribes helped their patients to be more satisfied with their emergency room experience that it may be due, in part, to the providers being able to spend more time with the patients.

Limitations

A main limitation of the study was that the population surveyed was limited to one provider organization, potentially limiting the perspectives of provider viewpoints on the utilization of emergency room scribes to one provider group's experiences. Furthermore, not all the providers of the group responded to the survey request, again potentially limiting the responses recorded. The providers who responded to the survey request may have felt more strongly one way or the other to the benefits or limitations of scribe utilization, perhaps leading these certain providers to be more apt to complete the survey to express their opinions.

The fact that data collection was exclusively done electronically via email survey requests may have also limited the responses, as there is a possibility that participants did

not check their e-mails to see that the survey had been sent or that the survey was delivered to their spam folder. However, the likelihood that all providers received the email survey request in their inbox was improved by having an EPPA employee distribute the surveys via their employee email. More direct means of communication, such as in-person surveys or utilization of paper copies of the survey, may have improved response rate by avoiding the above-mentioned inherent risks of the sole use of electronic communication. However, electronic communication was the most feasible option for quick and confidential data collection given the limited resources of the researchers.

Another limitation was that the provider group surveyed was based out of a suburb of the Twin Cities and therefore provider and patient population was not necessarily representative of a provider group based out of a more urban emergency department setting, where patient flow, patient satisfaction, and provider job satisfaction and efficient factors may be impacted by different variables than a suburban hospital setting.

Longitudinal limitations existed, as the time available to researchers to complete the research design and data collection was limited to the program length and course length. A longer duration of data collection may have resulted in a higher response rate, and thus more provider perspectives being recorded.

Finally, there was a lack of prior research studies pertaining to the topic, which was potentially limiting. Prior research studies may have helped to form the foundation for more thoroughly understanding the research question under investigation and thus a more exploratory design was required rather than an explanatory, tried, research design.

Recommendations

As previously recommended, inviting a larger sample size of providers to partake in the survey would potentially increase survey response and improve the reliability of the statistical analysis results. Furthermore, including additional emergency room provider groups in the population sampled, including sample groups from urban, rural, and suburban settings, may provide a more accurate and detailed representation of provider opinions on the utilization of emergency room scribes.

Further research could be completed with the recommended magnification of population size and provider group settings to expand upon the research results of this study. Future researchers could compare and contrast the results of this study with one that included a more expanded sample size and various provider settings to determine if the provider value placed on the utilization of scribes differed depending on the location of the providers and the emergency rooms. Furthermore, additional research in this area would be beneficial given the lack of prior research studies in order to confirm the reliability of the results of this study.

Conclusion

The purpose of this study was to evaluate scribe programs in the emergency room settings as to their role, impact on patient satisfaction, patient volume, and cost-effectiveness, as well as their perceived value by emergency room medical providers through survey methods. The results of the study indicated that emergency room providers thought the utilization of an emergency room scribe program had tremendous positive impacts on a variety of patient satisfaction and provider job performance factors. Further research in this area could be completed taking into account this study's

limitations to expand the research in this area so that hospital administrators could utilize the data, along with the findings of this research study, to further justify the implementation of scribe program.

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APPENDIX A

EPPA Agreement for Survey and Data Collection

Agreement of distribution was discussed via email and phone. Email conversation:

Kendra Kruger keb83832@bethel.edu Sep 25
to mbryant, mmbbryant, Wallace
Hi Dr. Bryant,

We are PA students from Bethel University, since January we have been in contact with Myke in an effort to confirm details of our research project. We are unsure of what information has been shared with you about our research project request, as we have not heard from Myke in a couple months. Last we heard from him he was still running this all by you, however as our deadline approaches to submit our finalized research project to IRB we were advised to reach out directly to you. We received these two email addresses from our program director, Wally Boeve.

We have been working on a research project evaluating the viewpoints of emergency department providers regarding the use of scribes. We were interested in this project, as we were both scribes under you with EPPA with the Allina group. We had requested for Myke to seek your approval for a contact at EPPA to distribute a survey link via email to all of your ED providers for them to complete an optional survey questionnaire that would take less than 3 minutes of their time. It is only 8 questions that they rate on a scale of 1-5.

When we were first in contact with Myke in January he said would run it by you but thought that it would likely be okay. However, when we most recently contact Myke he stated that he believed you were concerned with provider survey overload, therefore we thought we would wait a few months to reach out again with hopes that now might be a better time to distribute. We understand the risk of provider survey overload resulting in a low response rate but would still appreciate the opportunity to work with EPPA.

Our survey questions are below:

1. My patients are more satisfied with their emergency care services when I utilize a scribe.
2. I am able to spend more face-to-face time with patients when I utilize a scribe.
3. Scribes help to reduce my overall clerical/documentation duties per shift.
4. On average scribes help me to see more patients per shift compared to when I haven't used a scribe.
5. On average scribes help me to perform more billable medical services per shift compared to when I haven't used a scribe.
6. I feel more satisfied with my overall job performance when working with a scribe.
7. I enjoy my job as an emergency room provider more when working with a scribe.
8. Emergency rooms with implemented scribe programs function more efficiently.

We look forward to hearing from you soon, we appreciate your consideration!

Thanks,
Tara Tait & Kendra Kruger (Benson)

Bryant, Michael Sep 25
to me, mmbbryant, Wallace
Call me Monday to discuss
651-235-6094

Bryant, Michael Sep 25
to me, mmbbryant, Wallace
We already sent a survey with the exact same questions this past summer
I cannot give access to the distribution list. But could possibly submit for you and have results routed to you

---

Kendra Kruger keb83832@bethel.edu Sep 25
to Tara, Michael, Wallace
Thanks for you quick response!

Just to clarify, our survey has not been previously distributed through EPPA. Our hope was to have you distribute an email (we would not need access to your distribution list) inviting providers to take our survey linked to surveymonkey. The results would then be automatically routed to us.

Tara will contact you at the above number on Monday morning to discuss further.

Thank you,
Tara & Kendra

Tara Tait Sep 28
to me, Michael, Wallace
Dr. Bryant,

Thank you for taking the time to speak with me over the phone today. Kendra and I really appreciate your willingness to support our research project. We are very excited for the results, which as agreed upon, we will share with you.

Just to follow up from our conversation- once we are IRB approved (hopefully within the next few weeks) we will forward you an email with a link to our survey on survey monkey for you to distribute to all EPPA ED providers. We do not need access to the distribution list and the provider responses will be completely confidential.

APPENDIX B

Informed Consent and Cover Letter

Dear EPPA Emergency Room Provider:

We are physician assistant students from Bethel University, conducting research in partial fulfillment of the requirements for a Masters Degree in Physician Assistant Studies. **Our study is investigating emergency room provider attitudes towards emergency room scribes.** All physicians and advanced practice providers of EPPA that are currently practicing are receiving this e-mail.

Attached is a survey to gather necessary information to complete the data collection of this research**. The survey will take less than 3 minutes to complete**. By completing this survey, you are indicating informed consent to participate in this study. Reports and subsequent data will not discuss individual responses, but will include only group data. Your identity will be kept strictly confidential.

We understand that you have an extremely busy schedule and your time is limited. Please realize that your participation is vital to the success of this research. The information that you provide is essential to the validity of this study. Thank you in advance for your prompt response to this study. Please complete the survey by **November 20, 2015**. If you have any questions, please contact Tara Tait at 763-274-4514 or Dr. Donald Hopper, Faculty Chair at 763-350-3062.

Thank you again for your help.

Sincerely,

Kendra Kruger and Tara Tait

Bethel University Physician Assistant Program, Class of 2016

APPENDIX C

Emergency Room Provider Questionnaire

Section 1: Demographics

1. How many years have you worked as an emergency room provider?

2. Of those years, how many have you worked with an emergency room scribe?

3. What age range do you fall into?

Section 2: Attitudes regarding the value of emergency room scribes

Please rate your responses on a scale of 1-5 with:

1-Strongly disagree, 2-Disagree, 3-Neutral, 4- Agree, 5-Strongly agree

1. My patients are more satisfied with their emergency care services when I utilize a scribe.

   1 2 3 4 5

2. I am able to spend more face-to-face time with patients when I utilize a scribe.

   1 2 3 4 5

3. Scribes help to reduce my overall clerical/documentation duties per shift.

   1 2 3 4 5

4. On average the utilization of scribes help me to see more patients per shift compared to when I haven't used a scribe.

   1 2 3 4 5

5. On average scribes help me to perform more billable medical services per shift compared to when I haven't used a scribe.

   1 2 3 4 5

6. I feel more satisfied with my overall job performance when working with a scribe.

   1 2 3 4 5

7. I enjoy my job as an emergency room provider more when working with a scribe.

1 2 3 4 5

8. Emergency rooms with implemented scribe programs function more efficiently.

1 2 3 4 5

Comments:

APPENDIX D

EPPA Follow Up Email

BETHEL UNIVERSITY Kendra Kruger <keb83832@bethel.edu>

HELP A SCRIBE!! PLEASE READ THIS EMAIL
1 message

Bryant, Michael <mbryant@eppahealth.com>
To: DL-EPPA Physicians <DL-EPPA_Physicians@eppahealth.com>
Cc: Kendra Kruger <keb83832@bethel.edu>

Partners,

Please review the attached survey.

Informed Consent and Cover Letter

Dear EPPA Emergency Room Provider:

We are physician assistant students from Bethel University, conducting research in partial fulfillment of the requirements for a Masters Degree in Physician Assistant Studies. **Our study is investigating emergency room provider attitudes towards emergency room scribes.** All physicians and advanced practice providers of EPPA that are currently practicing are receiving this e-mail.

Below is a link to our survey to gather necessary information to complete the data collection of this research**. The survey will take less than 3 minutes to complete**.

https://www.surveymonkey.com/r/XJLV9HH

Emergency Room Provider Questionnaire Survey
Web survey powered by SurveyMonkey.com. Create your own online survey now with SurveyMonkey's expert certified FREE templates.
Read more...

By completing this survey, you are indicating informed consent to participate in this study. Reports and subsequent data will not discuss individual responses, but will include only group data. Your identity will be kept strictly confidential.

We understand that you have an extremely busy schedule and your time is limited. Please realize that your participation is vital to the success of this research. The information that you provide is essential to the validity of this study. Thank you in advance for your prompt response to this study. **Please complete the survey by November 20th, 2015**. If you have any questions, please contact Tara Tait at 763-274-4514 or Dr. Donald Hopper, Faculty Chair at 763-350-3062.

Thank you again for your help.

Sincerely,
Kendra Kruger and Tara Tait
Bethel University Physician Assistant Program, Class of 2016

APPENDIX E

IRB Approval

BETHEL UNIVERSITY **Kendra Kruger <keb83832@bethel.edu>**

Bethel IRB Approval - Level 3

3 messages

Wallace Boeve <w-boeve@bethel.edu>
To: Kendra Kruger <keb83832@bethel.edu>, Tara Tait <tat42452@bethel.edu>
Cc: Christy Hanson <c-hanson@bethel.edu>, Donald Hopper <donald.hopper@aol.com>, Peter Jankowski <pjankows@bethel.edu>
October 13, 2015

Kendra & Tara;

As granted by the Bethel University Human Subjects committee as the program director, I write this letter to you in approval of Level 3 Bethel IRB of your project entitled: "The impact of an implemented scribe program in emergency room settings on patient and provider satisfaction, overall patient volume, and emergency room cost effectiveness.." This approval is good for one year from today's date. You may proceed with data collection and analysis. Please let me know if you have any questions."

Sincerely;

Wallace Boeve, EdD, PA-C
Program Director
Physician Assistant Program
Bethel University
w-boeve@bethel.edu
651 308-1398 cell
651 635-1013 office
651 635-8039 fax
http://gs.bethel.edu/academics/masters/physician-assistant

CC: Bethel IRB Chair
Faculty Chair Advisor