IMPACT OF INFORMATION TECHNOLOGY ON REDUCING HOSPITAL READMISSIONS

CHAPTER 1

THE PROBLEM AND ITS BACKGROUND

Introduction

Hospital readmissions are costly in terms of lives lost, patient suffering, and financial waste (Collier, 2012; HIMSS, 2012; Joynt and Jha, 2012; Walraven et al., 2011). Specifically, readmissions are a significant contributor to poor patient outcomes and pose a staggering economic burden on Medicare resources (Cegarra-Navarro, Wensley, and Sanchez-Polo, 2011; Joynt and Jha, 2012).

Research findings indicate that 17.6 percent of hospital discharges result in readmissions within 30 days (Joynt and Jha, 2012; Walraven et al., 2011). Furthermore, research results found that 30-day readmissions are ultimately avoidable and found that the failure to provide adequate and coordinated transitional discharge care to be a significant contributor to 30-day hospital readmissions (HIMSS, 2012; Joynt and Jha, 2012; Myers and Shannon, 2012; Walraven et al., 2011). Moreover, the quality of post-discharge care coordination has been touted to be a significant driver of hospital readmission rates (Shelley et al., 2011). Specifically, low levels of two-way communication between patients and providers, and low levels of post-discharge care monitoring and tracking by care providers have been shown to significantly contribute to 30-day hospital readmission rates (Ahmed and Rak, 2010).

Beginning in 2012, Medicare began to reduce reimburse rates to hospitals for avoidable readmissions related to heart failure, pneumonia, and myocardial infarction (CMS, 2011; HIMSS, 2012). Such governmental incentives aimed at reducing hospital readmissions have created a sense of urgency among healthcare providers. Moreover, it has motivated researchers to discover and implement evidence-based strategies to reduce 30-day hospital readmissions rates (HIMSS, 2012). The government’s recent push to drive industry-wide reductions in 30-day hospital readmissions comes at a notable juncture in U.S. healthcare history. First, the mandate comes in tandem with the ACA, which has been described by industry pundits, researchers, and scholars alike as revolutionary “paradigm shift” in the structure (including delivery and financing) of the U.S. healthcare system. (Jones SS et al, 2010) noted that this shift is undergirded by theories which assume that certain systems, structures, incentives, financing, and deficiencies drive poor quality and that by gradually
restructuring the U.S. healthcare system to incentivize providers to adopt protocols, structures, tools, and cultures which support superior quality, significant nationwide improvements in overall healthcare cost, quality, and access will be realized (McCullough JS et al, 2010). Second, this push comes at a time in which the federal government has directed an unprecedented amount of attention and final resources towards the adoption of health information technology within the healthcare industry. This attention has come in the form of several mandates that require healthcare organizations to adopt certified health information technology tools or face significant penalties. This drive is undergirded by the government’s assumption that the healthcare industry lags other industries in its use of information technology and that rectifying this deficiency is a critical foundational factor in the development of standardized systems and procedures that have the potential to improve quality. For example, the healthcare industry lags other industries by such and such. Furthermore, the critical role/impact/benefits of the utilization, and adoption of other safety oriented industries such as the airline industry has been cited by experts as an embarrassment to the healthcare industry which shares a similar need for the precision, coordination, error checking, etc. needed by other similar safety oriented industries (Jha AK et al, 2009). This has lead to a plethora of research opportunities for researchers and others to investigate the role of health information technology in improving various identified governmental targets, including that of reducing hospital readmission rates. Several governmentally and privately funded research findings have founded a direct correlation between the utilization of health information technology tools and quality metrics. Additional research into the role of information technology in reducing 30-day hospital readmission rates will come at a critical time in terms of the overall changes currently underway within the U.S. healthcare system, the critical need for a solution to the extended problem of 30-day hospital readmissions, and the current emphasis on health information technology. Furthermore, This recent acceleration of the adoption of health information technologies within the healthcare arena and its proven track record of reducing barriers to poor care quality, coupled with the heightened focus on the utilization of information technology as a critical component of evidence-based systems, provides an ideal environment to explore the role of health information technology (HIT) in mitigating hospital readmissions. Interestingly, there is ample research supporting the positive impact of HIT in improving inpatient and ambulatory care quality, including reducing medication errors (Shelley et al., 2011; Vollmer, et al., 2011). However, there is less research on the impact of HIT in facilitating post-discharge care quality. This study will extend current research studies that have investigated the role of health information technology in improving care quality and outcomes in the inpatient and ambulatory settings by specifically examining the impact of HIT on reducing 30-day hospital readmissions rates.
Background of the Study

A study of hospital readmissions found that over 20 percent of patients were readmitted within 30 days (Jenck, Williams, and Coleman, 2009). The study also found that 50 percent of those readmitted did not have a post-discharge visit with their primary care physician (Jenck et al., 2009). This resulted in a tenfold increase in the chance of being readmitted. The study also found that 70 percent of surgery patients were readmitted within 30 days for conditions such as a urinary tract infection or pneumonia (Jenck et al., 2009). Furthermore, researchers found that although not all hospital readmissions can be prevented, over 75 percent of 30-day Medicare readmissions are preventable, which could save over $12 in Medicare spending (Medpac, 2007). In earlier efforts to reduce hospital readmissions rates, CMS (2011) identified the utilization of clear discharge directions with the specific medication management components as a crucial intervention strategy. Showalter et al. (2011) tested the theory that executing a standardized electronic release instructional document with the embedded automated medication understanding would reduce post-discharge hospital use. Their findings did not find a significant improvement in patient outcomes. However, previous studies have shown significant improvement in clinical outcomes in care settings which utilize health information technology tools (Cegarra-Navarro, Wensley, and Sanchez-Polo, 2011; Myers and Shannon, 2012; Shelley et al., 2011). Furthermore, technological improvements in health information technology tools and specifically those utilized in the discharge process warrants further investigation into the impact of current technology tools on 30-day hospital readmissions. It has been found that problems relating to communication and the fast dissemination of information especially a hospital discharge adversely affect patient (Kripalani, et al., 2007b). It is almost routinely that insufficiency relating to communication in this area of health care delivery compromises the prompt delivery of the necessary medical attention. In fact, many patients are released from the hospitals with pending laboratory and test results. In addition, a number of attending physicians report that most of them are not being properly informed of test results which had been released to discharged patients despite requiring immediate medical intervention (Roy et al., 2005). Among the typical concerns following discharge is acute drug effect (ADE), due to the lack of sufficient time to observe how certain prescription would affect the patient. ADE’s are potentially harmful to patients. However, this incident can easily be preventable (Forster et al., 2005).
Statement of the Problem

The study will seek to answer the following research question: What is the relationship between the utilization of health information technology tools and 30-day hospital readmission rates?

Specifically, do patients whose post-discharge care are managed through the utilization of one or more health information technology tools experience a lower rate of 30-day hospital readmissions than patients whose care are managed through conventional non-electronic methods?

Limitations of the Study

Hospitals frequently serve as the crucial point for decreasing hospital readmissions; therefore, readmissions are inclined by several factors along with the care continuum. Even many meeting members agreed that the present delivery system is untenable and an important contributor to unnecessary readmissions; i.e., a proper system come up to to care is deficient. Efforts to decrease readmissions will need examination of distinctiveness and procedures along the care range —before, during, and later than the early hospital admission.

So far as the hospital readmissions associate with hospital admissions, checking the initial admission might help to decrease readmission. As a participant noted that an effective mean to stop readmission is to avoid the ‘index’ hospitalization. Besides, the decresing number of practicing the primary care physicians (or PCPs) may possibly put at risk access to timely main care, a medical habitat, and the preventive care. Moreover, augmented specialization restrains providers’ skill to treat and manage the patients with manifold chronic conditions. Organize the concern of Medicare beneficiaries with numerous chronic conditions. Such as a 1999 analysis found that 65 % of the Medicare receivers had two or more constant situations (Wolff, J. et al, 2002) is really demanding as patients with the multiple chronic conditions might be taken care by as many as 16 specialized physicians every year. As persons with manifold chronic conditions are really at high jeopardy for readmissions, improving illness and care management schemes may help to sustain these individuals in the community settings. A participant pointed that Medicare’s value improvement organizations (QIOs) regards as hospitalizations of individual persons with the chronic conditions an preventable mistake until proven otherwise.
The conversion from inpatient to the outpatient background is a critical end along the care range in which there is a genuine opportunity to stop readmissions. Though patients may accept discharge policy from a nurse or a social worker, probably they may not fully comprehend follow-up care directions or have the skill to suitably self manage their care. Frequently times, patients don’t obtain physician or nurse take notes calls or don’t visit their PCP following the timely discharge (Naylor, M.D. et al, 1999).

Moreover, the payment system never allows the payment to both either Hospitalist or PCP on the similar day for assessment and management of the identical clinical form if the physicians are in the similar medical assembly and specialty (CMMS, 2008).

**Significance of the Study**

The purpose of this study is to evaluate the relationship between the utilization of health information technology tools (independent variable) and 30-day hospital readmission rates (dependent variable). Specifically, the relationship between information technology utilization (independent variable) and 30-day hospital readmission rates (dependent variable) will be investigated. The study will explicitly study the role of health information technologies (HIT) which facilitate communication of post-discharge care instructions to patients, medication information, reminders, and care tracking and monitoring between patients and their providers.

This study will help fill a significant gap in research exploring the correlation between HIT utilization and hospital readmission rates. By focusing on 30-day readmissions, this study will fill a significant gap in the body of knowledge (between the impact of HIT within the inpatient and ambulatory setting). From a social change perspective, this study is well suited to the directives of the 2009 healthcare reform legislation signed into law by President Barack Obama, which promotes significant improvements in cost reduction, efficiency, and access to quality care for all Americans. A focal point of this legislation is the use of HIT to help generate these changes. Furthermore, hospital administrators, researchers, providers, and governmental agencies are interested in strategies that can help mitigate hospital readmissions.

The results of this study would benefit a number of people, especially since it focuses on healthcare management, an important facet in medicine that, if properly managed, can decrease mortality rates and readmission incidences, among other benefits.
Information technology has the latent to get better the quality, safety, and the efficiency of health care. Transmission of IT in medical and health care is usually low (varying, nevertheless, with the purpose and background) but surveys point out that providers sketch to boost their savings. Drivers of savings in IT comprise the guarantee of quality and competence gains. Barriers comprise the cost and complication of IT execution, which often necessitates important work process and cultural transforms. Certain uniqueness of the health care market—counting reimbursement policies that return volume rather than quality, moreover a fragmented delivery method can also cause barriers to the IT adoption. Certain IT’s potential, both private and public zones have engaged in many efforts to uphold its use inside and across health care domain. Additional steps could contain financial encouragement (e.g., payment policy or even loans) and extended efforts to standardize report formats, nomenclature, and statement protocols to improve interoperability. Conversely, any policy to motivate further investment ought to be carefully measured because of the opportunity of unintentional consequences.

However, relatively few health care providers have fully assumed IT. Low diffusion is due partially to the complexity of IT investment, which goes further than acquiring technology to varying work processes and the cultures, and guarantee that physicians, nurses, and the other health care staffs use it.

The healthcare industry nowadays after twenty five long years, since computers started persuading our society, is ranking at the verge of a world of possibilities frightened up by the technologies such as the Virtual Reality, Cyber operation, Micro – robotic operation and the 3D image modeling. It is believed that the Internet ought to be used for the advantage of mankind. Internet experts have always felt that the development and release of Medicine will be one region where this standard is likely to have huge benefit to the mankind. For e-healthcare and the telemedicine to materialize as a viable option modality for delivering the medical care and proficiency there are a few prerequisite that should to be met. A few of these are:

Adaptation of the Information technology by the hospitals in particular in terms of Hospital Management systems.

Decline in the rate of the telemedicine hardware to craft it more financially feasible.
Better Internet access; the advantage of broadband services in India that could be able to transfer the video files faster.

Standardization of the various protocols (such as DICOM in Teleradiology) and the acceptance of these protocols with the pertinent equipment manufacturers.
Gradually increasing consciousness on IT among all the medical professionals. Participation of many multinational companies in this e-health care market make this venture more fruitful and intense.

IT allows medical and health care suppliers to collect, stock up, retrieve, and transmit information electronically. On the contrary, more specific talk of IT in the health care is demanding due to the lack of the precise definitions, the quantity of applications, and a quick pace of change in the technology. Similar conditions can be applied to define diverse products, and the precise functions of a method will depend on the particulars of its implementation in the given setting. Besides, both the conditions and the purposes also alter over time. Such as, computerized provider order entry (CPOE), that can minimize handwriting or even other communication errors by encompassing physicians or other suppliers enter instructions into a computer system, may apply only to the prescription drugs, or might also include other physician orders, like as x-rays or the other images, consultation, and transfer. For the electronic health records (EHRs, which is also known as the electronic medical records, automatic medical records, and the computer-based patient records), multiple descriptions exist, depending on the collection of functions that are incorporated (Brailler and Tarasawa 2003). These can be applied simply as a submissive tool to stock up the patient information or be able to include multiple decision shore up functions, like as individualized patient reminders with prescribing alerts. When purchasing IT, supplier must consider numerous functions and accurately hundreds of applications presented by many vendors. Usually, a variety of IT applications come into three categories:

The administrative and the financial systems that ease billing, accounting, official data entry and other administrative tasks.

The infrastructure which supports both the administrative and the clinical applications.

Clinical systems that smooth the progress of or supply input into the care process.

Information technology driven Electronic health record (or EHR) systems have the latent to convert the medical and health care structure from a paper-based industry to the digital one that uses clinical and other section of information to support providers in distributing the higher quality of treatment to their patients. However, the EHR system provides huge benefits to patients and society (Menachemi N et al, 2007).

Researchers have studied the benefits of EHRs by allowing for medical, organizational, and the societal outcomes. Clinical results include development in the quality of treatment, a decrease in medical mistakes, and other developments in patient-level actions that depict the suitability of care. Organizational result, on the contrary, must have included such matters such as financial and the operational presentation, as well as pleasure among patients and the clinicians who use the EHRs. Lastly, societal results include being better capable to carry out research and achieving enhanced population health.
Several clinical results that have been a spotlight of EHR learn to relate to the quality of care and patient protection (AHRQ, 2004). Quality of care comprises six dimensions (IOM, 2001). But most of the EHR investigate has focused on the subsequent three: the patient safety, effectiveness, and the efficiency.

EHRs, specially those with the CDS tools, have empirically connected to an augmented adherence to the evidence-based clinical plans and effective care. In spite of the best purpose of providers, different factors may outcome in patient meet that do not stick to the best practice plan. Some causes for this nonadherence comprise i) clinicians not perceptive to the plan, ii) clinicians not understanding that a guideline relates to a given patient, in addition to iii) lack of time throughout the patient visit. The EHR structure try to triumph over these matters, and researchers have alerted on preventive services, counting vaccine administration, to inspect how EHRs can get better adherence rates. Such as, researchers found that automated physician reminders amplified the utilize of influenza and pneumococcal vaccination from practically 0\(-\)35\% and 50\%, for the hospitalized patients (Dexter PR et al, 2001). A related study, other than in the outpatient surroundings, found that automated reminders were connected with enhanced influenza and pneumococcal vaccination charge among Rheumatology patients having immunosuppressant medications (Ledwich LJ, 2009).

Most hospitals could not see any tangible reward for the IT system, aside from the fact that it is simply an added cost to the long lists of unnecessary expenditures of the institution.

As an alternative, a number of medical facilities decided to create computer-generated summaries. Some adopt standardized formats which were believed to suffice for the absence of an intricate IT system. Those who opted for this alternative thought that this intervention could facilitate for a more apt transfer of relevant information about the patient to primary care physicians. In addition, it is also perceived that the discharge summaries are equally available during follow-up check-ups like the one provided by an IT system (Kripalani, et al., 2007b). Nevertheless, these alternatives pose no answer to the issue that addresses test results which comes after hospital discharge (Roy et al., 2005).

In a study conducted in 2008, it revealed that information technology adaptation in several hospitals across the state of Florida produced desirable quality results (Menachemi et al., 2008). This finding was considered encouraging and equally motivating in fostering a deeper understanding as to the rewards and benefit of adopting an information technology system in hospitals. In addition, it fosters understanding to the nuances that IT adaptation is costly which yields very minimal benefit for hospitals, physicians and patients.
In the impact assessment of information technology in the health care system, besides lots of benefits of using such avant-garde technologies, there are some drawbacks which is also discussed here. If these are recovered which could be possible with the intensive research work, will cause the boon for the millions of the people.

It has been significantly proven that many hospitals and other medical facilities with the most sophisticated and well-established IT system is performing at its optimal level given its approximate number of PSIs. There had also been significant findings that the adoption of IT system in hospitals has been correlated to productivity and superior quality performance in numerous measures and procedures associated with patient safety (Menachemi et al., 2007).

Managing patients with chronic illness requires extensive and continuous monitoring, as well as regular updates on the progression and development on patient’s condition (Holman and Lorig, 2000, in Celler, Lovell, and Basilakis, 2003). What is critical at this point of comprehensive healthcare strategy encompasses a condition of incorporating a web-based health education, efficient and effective management of demographic data and enhanced protocol-based regulation of clinical procedures and medication (Reed M, 2004).

One of the biggest greatest challenges that healthcare system is facing is providing the quality care to the great segment of the population, that does not have any access to the specialty physicians just because of a few factors such as the geographic limitations or the socioeconomic conditions. The application of technology to convey health care from a certain distance, or the telemedicine, has been confirmed as an effective mode of overcoming certain obstacles to care, mainly for communities located in the rural and remote zones. In addition with that, telemedicine can minimize the gaps in providing essential care for those people who are underserved, primarily because of a lack of sub-specialty suppliers. With the use of the wireless and telecommunication technologies, health care system is about to leap forward. The improvement and installation of the high-speed wireless telecommunication networks united with large-scale search-engines and the mobile devices will modify health care deliverance as well as the possibility of health care services. It will permit for real-time observing and interactions with the patients without carrying them into a healthcare center or hospital. This real or near-time monitoring and interrelating could enable a healthcare force to address patient troubles before they necessitate major interventions, generating a potentially patient-centered approaching idea that could undoubtedly alter the expectations of the healthcare system (Texas Statewide Health Coordinating Council report, 2011).
There were also significant findings which suggest that hospitals that already adopt an automated system of managing their records and documentation report fewer problems, decreased death rate and lower expenditures (Amarangsingh et al., 2009, Tierney, W. M et al, 2003, Scalet, S. 2003, Kaushal K., 2001).

Among the most intricate tasks in healthcare delivery refers to medication procedures and protocols. This is because medication administration entails numerous side effects and adverse reactions. These are issues that require extensive discussion and intervention. Given the nature of medicine administration, monitoring is highly necessary especially for patients receiving multiple medications of different classes (Forster et al., 2005).

The most critical period for patient is the time after which the patient has been discharged from the hospital. There were records to support that nearly half of the adult population discharged from the hospital have committed medical errors. Roughly 19 to 23% suffers from adverse effect relating to drug use or medication lapses. Base on reviews, it reveals that among the common problems relating to hospital discharge include a disruption in the type of care provided by the hospital and physician, an altercation in the medication routine, misunderstanding in the self-care responsibilities and complicated discharge instructions. It was found that by addressing the key challenges posted from discharging patients through a strategy that would enforce strict monitoring during the transition phase from hospital to home it would significantly lessen the medical errors during this period in healthcare (Kripalani et al., 2007a).

Problems relating to medication administration are common especially for pediatric cases. However, the dawn of information technology can significantly lessen or reduce the incidence of these errors. In fact, it is perceived that the bulk of benefits that can be drawn from the use and adaptation of information technology is greater in pediatric cases as is it is adult medicine. This is because pediatric cases require more intricate medicine administration protocols like weight-based dosing. Thus, there is a need for more extensive development, use, analysis and distribution of pedia-specific IT intervention (Kaushal, Barker, and Bates, 2001).

**Hospital Readmission**

Hospital Readmission refers to the process by which patients are subjected to hospital confinement following discharge due to several factors.
Among the factors connected to increase rate of hospital readmission includes complications caused by non-compliance to medical orders, mismanagement of medical condition following inconsistencies in previous diagnosis with new findings documented from recent lab results and the most common is medication-related complications. Numerous studies have concluded that the readmission rate of hospitals is an indicator of the quality of care that said medical facilities provide to their patients. Thus, an increase rate of hospital readmission indicates poor healthcare delivery system.

In a recent study it reveals that about 5 to 25% of medical-surgical cases are re-admitted to hospitals in as little span of 30 days. The said study shows that the readmission is caused by complications resulting to poor patient compliance, mismanagement and negligence. However, some physicians say that it all boils down to the lack of a system that can easily be accessed by any medical team which would consist of all the necessary information and findings relating to a particular patient.

Another problem that has been identified relating to hospital readmission is the possibility that patients will be treated under a different physician and medical team. This poses a problem relating to communicating previous information or medical records of the patient to the new team in-charge of caring for the patient. Although the discharge summary may contain some information, it does not account for all the necessary details that may aid in providing optimum health care.

Nobody can say for a fact whether physicians follow a distinct communication pattern or practice relating to patient readmission. Usually, readmission problem originates with a dysfunctional communication model. Physicians are often unaware of the frequency of readmission, which is important in identifying the root cause why patients are going in and out of the hospital. The pressing need to improve the communication system is important to prevent the incidence of readmission. If the incident has been recurring, there could be a reason for this which can easily be managed if detected.

On a similar note, the differing views and opinions of medical professionals have an effect in the process of relating information. In a study which reviewed patients who were readmitted after 14 days of discharge, it shows that the readmitting physicians think that it is unnecessary to go over previous records while the medical team from the opposite end, i.e., the discharging team says it is necessary. This conflicting relate to why hospitals could not resolve and see the urgent need of developing an IT system.
Members of the readmitting team say that it is a waste of time to go over something which had already been addressed during previous hospital confinement. Some even argues that physicians who do this show that they do not trust the credibility of the previous physician who attended to the patient. However, discharging team believes that usually the reason for readmission has something to do with earlier admission especially if the interval between the discharge and readmission was within 30 days.

**Specially Designed Information Technology System for Hospitals**

Evaluating the common cause of readmission led many researchers to conclude that it is generally an issue of a dysfunctional communication system. Most researches were quick to conclude that to resolve these problems hospitals should consider changing the existing practice or model of communicating patient’s records.

According to most general practitioners this issue can be resolved with the adoption of a sophisticated health information technology. They believe that such technology would be able to facilitate and compile all of a single patient’s medical records in a computer’s database. In addition, by fostering an intricate design where this information can be retrieved from any port or location. Moreover, it can be fashioned to connect to several departments within the hospital or even within a broader scope as regional health facilities which would collate medical findings, diagnosis and reports made by other physicians and health facilities. This initiative would foster updates regarding patient’s condition which in return prevent any complication or inconsistencies with any treatment that the patient is currently taking at the exact moment of the consultation. This would prevent any complication or inconsistencies which are among the common cause of hospital readmission.

A specially designed information technology system for hospitals should be able to assist the members of the readmitting team to get all the necessary details of the patient’s previous admission along with the details of the medical order following discharge. This will help the readmitting team evaluate the probable cause that leads to the patient’s readmission. This can ensure that the patient’s concern will be addressed appropriately. In addition, the health IT system should also allow the members of the discharging team to update the patient’s medical records particularly on any pending results and findings following discharge.
Synthesis

The disagreement and inconsistencies relating to communication particularly between the hospitals and physicians would significantly be better with the introduction of information technology. The presentation of a regional computer database especially designed for general surgery facilitates for the creation of discharge summaries at a faster rate. Significant improvement in the information provided in the discharge summaries is also perceived. Numerous physicians and general practitioners (Adams, Bristol, and Poskitt, 1993) will improve the innovation in information technology in lieu of clinical audits especially in dispensing well-structured discharge summaries that are widely accepted.

A health information technology system is believed to provide numerous benefits. Among these benefits include better service quality, increased level of satisfaction of patients and clinicians as well as decreased costs. On the other hand, small-scale health facilities are having a hard time in following the trend to adopt a health information technology system. In terms of large-scale medical facilities, to ensure that the IT system would yield a positive feedback or outcome there is a need for close monitoring of the administrative workflow and organization of resources and tasks management. For small, office-based health information technology like a physician’s office, a strong leadership, restructuring of processes, change management and customization are necessary to achieve the desired result (Lee et al., 2005).

The foreseen potential of a healthcare information technology system that is believed to change the face of health care delivery system as it is seen to ignite many medical facilities to invest in building an IT infrastructure that will improve health services and ensure patient safety.

Although majority of the literature gathered on this topic points to the benefits of health-based IT system in the academe, its value on a larger perspective has yet to be seen. Studies geared towards understanding the effect of information technology to patient safety suggest minimal beneficial effects. However, these results are encouraging enough to warrant the suggestion of investing in health-based information technology system. In addition, it is also encouraged that same investment is allotted in evaluating the applied information technology system in hospital settings (Kaushal K et al, 2001, DesRoches CM et al, 2010).
The goal of any health facility is secure the safety and wellness of their patients. To do this they should be able to know the reason and cause of the medical condition that patient comes in for consultation. This can only be possible if physicians are properly informed of the patient’s medical history. It would be a complete waste of time if patients will always be asked to provide every detail of their medical history during medical assessment. In addition, it is not always possible that patients remember everything that the doctors order. Retrieval, dynamic and comprehensive system should be able to do this. This is possible with a health information technology system that houses all the necessary information about the patient in a hospital database.

In retrospect, despite many readmitting physicians argues that there is no reason to communicate or know the facts from the previous admission there are only limitations to this argument. This is only appropriate for conditions as in the case where the readmission was part of the order from the previous hospital admission. In addition, if the readmission was also awarded to the exact same medical team who attended to the patient initially during the first admission there is a probability to do away with communicating the discharge summary. However, in such events it must be noted that since physicians attend to numerous patients on a daily basis there is still the need to refresh them of the condition of a particular case even for security purposes.

The absence of a system that would notify physicians of readmission constitute to a barrier in effective and quality health care delivery. This barrier should be removed to ensure that patient’s are receiving quality care and assuring of the patient’s safety and wellness.

CHAPTER 3

METHODOLOGY

In this chapter, the researcher will discuss the methodologies followed for the completion of the objectives of this study. The research design, eligibility of respondents, data collection, and data analysis will be discussed in full detail in the following sections below.

Research Design

The hypothesis to be tested is that there will be a negative correlation between the utilization of HIT tools and 30 hospital readmission rates. Specifically, as the intensity and frequency of HIT tools increases, the 30 day readmission rate will decrease.
Higher levels of HIT utilization will correlate with lower 30-day readmissions at the facilities tested, but there might be exceptions. The hypothesis will be tested and measured through a quantitative quasi-experimental ex post facto pre-test/post-test-o design. The study will measure hospitalized patients 18 and older who were discharged between [DATE] (pre-implementation cohort) and between [DATE] (post-implementation cohort) at two hospitals using a convenience sample. Both cohorts will be measured for HIT utilization and 30-day readmissions. The quasi-experimental design is suitable for utilization in studies in which only a convenience is possible, due to limitations in randomizing subjects. Specifically, this design is suitable to studies in which the researcher must utilize naturally formed groups, as is the case of the groups included in my study (post-discharge adult patients from selected hospitals) (Creswell, 2008). Note to reviewer – we may need to find a better design based upon running analysis on archival deidentified medical records.

Respondents of the Study
The data will be collected through the medical records of hospitalized patients 18 and older who were discharged between [DATE] as my pre-implementation cohort and between [DATE] as my post-implementation cohort.

Sampling Strategy
The researcher will make use of a convenience sample. Convenience samples are generally limited in validity due to limitations in generalizing to the larger population (Creswell, 2009). The data collection method will be a questionnaire, which will be sent to the quality assurance departments of three hospitals asking for data on hospital readmissions within a certain period, and the use of health information technology tools to manage post-discharge care on the patients included in the data set. The data will then be translated into data sets indicating whether or not the facility utilized EMR technology in the transitional process and whether or not the patient was readmitted within 30 days.

Ethical Considerations
Since the respondents of this research are human beings, the ethical implications of the study must be recognized to avoid unnecessary complications. This section of the methodology functions as the researcher’s code of conduct while engaged in tasks related to the conduct and completion of the research. This will not only take into proper consideration the civil liberties of the respondents of this study and their students but it will also contribute to credibility of the results of this research since the data were asked for and provided by the respondents while conforming to strict protocol.
Consent

The respondents should be made fully aware of the reason why the research was conducted and for what purpose the results will be used. This will allow the researcher to gain the confidence of the respondents. The respondents will take the researcher’s willingness to share information with them as a sign that the results will not be used to place harm upon them. The foremost rationale of specifically identifying kindergarten teachers for the research is to have access to information that only this particular group of people can provide. As such, the participants should have the privileges to be familiar with at least the objectives of the research.

Data Protection

All of the information retrieved from the respondents must be regarded as important data that has to be secured. Doing so will guarantee that the results of this study will not be used for irrelevant purposes apart from achieving the objectives of the study. The researcher must keep in mind that although the results of the study can and may well be applied for future researches, it must be utilized in a legal manner.

Data Collection

Data Analysis

Descriptive statistics will be used to describe the variables of this study through frequency counts, mean scores, and percentages. Responses to demographic questions will be reviewed to determine if it can be further narrowed down to subgroups. Then, the frequencies will be analyzed in relation to statements derived from the review of literature. This way, the data is backed up by credible information.

As such, inferential statistics will be used to identify whether significant relationships exist between the variables. Potential analytical strategies include multiple regressions, which is a correlation statistical test that used to compare two distributions of scores, or scores that are broadly dispersed along two dimensions (Rudestam and Newton, 2007). Tables, charts, and texts will be used to present the data more efficiently.
BIBLIOGRAPHY


Reed, M., Center for Studying Health System Change (February 2004). Memorandum to Chantal Worzala.


