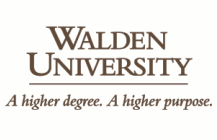

2018

Examination of All Cause 30 Day Hospital Readmissions

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Walden University
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Abstract

Examination of All-Cause 30-Day Hospital Readmissions

by

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MS, Walden University, 2010

Project Submitted in Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

August 2018

Abstract

Each year in the United States, thousands of people are readmitted within 30 days of being discharged from a hospital. Current research indicates that at least one-third of these rehospitalizations are preventable. The purpose of this project was to examine patient and environmental characteristics of those who were readmitted within 30 days of discharge for commonalities that may explain the gap in practice for a specific health care organization. The project was undertaken in response to the organization's need to improve a 50th-percentile ranking with the goal of reaching the top 10th percentile. A plan-do study-act framework was used as a guide to ensure no steps in the process were missed and the logical progression of the project was clear. Three fiscal quarters of data, including 515 readmissions, were examined. A data analytics cube on hospital-wide readmissions provided patient and environmental characteristics that were charted using common language for sorting purposes. Data analysis revealed that 77% of patients were admitted within 30 days of discharge with a diagnosis that differed significantly from the index admission. Potential gaps in practice identified were a need for more patient and family engagement and education by nursing during the inpatient stay in regard to the primary admitting condition, the management of comorbidities, and potential posthospital complications. Need exists for more intense whole-patient monitoring, communication, and education following the transition from hospital to home. A reduction in 30-day readmissions can reduce the psychological and physical burden on patients and families, on health care resources that could be used for other purposes, and on society in the form of financial costs that continue to rise.

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Dedication

This project is dedicated to my dog Willow who passed away during its writing. She was a loyal companion for many years. I know she will still be waiting for me when I get there…

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Section 1: Introduction

Examination of All-Cause 30-Day Hospital Readmissions

Hospital readmissions within 30 days of discharge pose the risk of negative physical, emotional, and psychological harm to patients and are a measure of quality in healthcare (Braet, Weltens, & Sermeous, 2016). Nationally, one of every five Medicare patients is readmitted within 30 days of discharge from the hospital at a cost of more than 26 billion dollars a year (Leppin et al., 2014). According to the Agency for Healthcare Research and Quality (2014a), the total of additional hospital costs for readmissions is 41.3 billion dollars per year in the United States. High rates of readmissions are an indicator for substandard care and poor transitional care as up to 30% of admissions are deemed preventable (Health Information Technology Consultant, 2013).

This facility has 30 day readmission rates higher than the 50th percentile in comparison with similar hospitals. My aim in this quality improvement project was to analyze hospital data for the variables attributed to 30 day hospital readmissions by examining patient discharges in the 3 most recent fiscal quarters. Systematic evaluation of a performance measure holds the potential to improve health care outcomes, reduce illness burden on families and communities, and reduce health care costs for society. Positive social change will be created when information gleaned from this analysis is used to assist hospital leadership improve the quality of care for patients.

Problem Statement

The focus of this doctoral project was to identify and analyze the variables attributed to 30-day hospital readmissions in a specific health care organization to inform

leadership of areas for practice improvement. The 30 day readmission quality metric needs to be understood and improved to ensure that the best care is being provided to patients. An examination and analysis of variables in a specific organization contributes to the body of work that constitutes knowledge for the discipline of nursing. According to Kulbok and Ervin (2012), knowledge in nursing is a product of the interaction and interdependence of four domains: the discipline and science of nursing, the philosophy of nursing, the nursing profession, and nursing practice. Advancing knowledge by improving the care delivery model advances the profession.

The examination of organizational specific causes for 30-day hospital readmissions presents an opportunity for nurses to influence the quality of care provided to patients through the introduction of evidence based practice. According to Nazir et al. (2016), transitions of care have the potential to result in miscommunication and lead to medication errors, poor follow up, and rehospitalization. Nurses are able to examine and change the care delivery models used during patient transitions by using research evidence to improve health care outcomes. Lowering the organization specific rates for preventable hospital readmissions provides an opportunity for the profession of nursing to demonstrate their ability to have an influence on patient outcomes. The work will potentially represent a guide for other facilities undertaking improvement work in this area and holds the potential to increase nursing satisfaction within the profession through autonomy in practice (Kramer & Schmalenberg, 2008).

Purpose

A meaningful gap in practice exists between the organization's specific practices that contribute to 30-day readmissions and best practice benchmarks. My purpose in this project was to identify variables that demonstrate where these gaps in practice may be occurring. Readmissions result in potential psychological, emotional, and physical harm to individuals along with a financial burden reaching billions of dollars for payers and society as a whole (Leppin, 2014). The opportunity to provide a higher quality of health care exists as *at least 30%* of 30-day readmissions have been deemed preventable (Leppin, 2014). Evidence that this is a feasible goal can be found in a study by Zuckerman et al. (2016), who noted that hospital readmissions were immediately and significantly reduced in the period directly following the threat of financial penalties by third party payers such as Medicare.

The guiding practice-focused question for the project was: Which common patient or environmental variables can be found among patients readmitted within 30 days of hospital discharge? This evidence was summarized for hospital leadership and best practice recommendations were developed. Research evidence, when applied using a framework, has the potential to inform the work of others undertaking similar practice challenges. Recommending the use of a different model of nursing care or choosing to use a specific theory to guide improvements in nursing practice is the work that helps build a bridge to change.

Nature of the Doctoral Project

I undertook this project at the request of leadership at this acute care facility in response to an identified need. Leadership supported use of facility specific data for the project. The source of evidence that I used to examine the causes of 30-day preventable hospital readmission was the data collected through the Veterans Affairs (VA) databases using analytics software. Sources of evidence addressing the need to decrease 30-day hospital readmissions included original research literature, government oversight bodies such as CMS, and the wealth of information available through other Department of VA databases and reports. A significant amount of research, including meta-analyses, has been done to identify the causes of hospital readmissions. This has been driven by both cost and the desire to provide a higher quality of care. To date, hospital readmissions have been reduced only slightly (CMS, 2017a) for the measures of heart failure, pneumonia, and acute myocardial infarction, but a significant and sustainable drop remains elusive. Decreased 30-day all-cause preventable readmissions are frequently addressed by developing interventions based on gaps found in meeting patient needs and have been found to be *organization specific* (Singh et al., 2014).

This project was a quality improvement initiative. The approach was guided by the plan, do, study, and act (PDSA) framework and started with identifying the metric that would be measured (plan). The metric was objective, easy to measure, easy to report, and modifiable (Morelli, 2016). I determined categories for comparison for this project which included the diagnosis-related group, age, number of chronic comorbidities, number of medications, discharge services used, presence of help at home and the model

of nursing care that was delivered at the time of the original discharge. I used findings from existing studies in similar facilities throughout the United States for comparison to examine potential areas for process improvement. A significant range of areas has been studied to improve 30-day hospital readmission rates. These areas include the aforementioned categories as well as the nursing work environment (McHugh & Ma, 2013), improving core discharge coordination processes (Institute for Health Care Improvement, 2018a), enhanced care and support during transitions, and improved patient education and self-management support (IHI, 2018b). The areas chosen for comparison for this project were the areas cited most frequently in the literature.

The second step in the framework was developing the process; it is in this step that roles are assigned if applicable (do) and means of communication are developed and remain clear. The third step was assessing the data (study); metrics were compared to chosen benchmarks to develop measures for success. The final step (act) was recommending improvements where the data demonstrated they were needed. In the PDSA model, this process can continue in a cycle until the projected goal is reached. I obtained data for the improvement project through the aggregated database of deidentified patient records because the practice focused question could be answered through retroactive examination of the electronic medical record. In addition, I used lessons learned from previous facility efforts to reduce 30-day hospital readmissions.

Significance

The primary stakeholders for this initiative were patients. Because the 30-day hospital readmissions benchmark is a measure of quality, decreasing the percentile of readmissions would theoretically improve the quality of care that patients receive (Labrada et al., 2017). Patients may benefit from recommendations to intervene on the common themes found in the profiles of those who were readmitted and common themes may represent a gap in practice. An examination of the nursing model of care used during and following discharge from the hospital also has potential to provide benefit as such identification has led to interventions that have shown promise in decreasing the incidence of 30-day preventable hospital readmissions (McHugh et al., 2013).

A second group of stakeholders are providers. Providers are an important component in the effort to decrease hospital readmissions because they are the driver for the care received by the patient on initial admission. Buy-in for improvement efforts is mandatory for this group because without cooperation, improvement efforts cannot succeed. The quality of care provided to patients is the primary focus of providers in health care institutions. According to Brandon et al., (2003), physician satisfaction is tied to the quality of care they provide to patients. Any intervention to improve the quality of care will be of interest to this stakeholder group as both professional and personal provider satisfaction can be derived by the provision of high-quality health care.

The next two groups of stakeholders include nursing and administration. Nurses are involved in discharge planning and the discharge process. They are largely responsible for patient education and frequently have established relationships with

patients and their families. Nurses need to be directly involved with any change in practice recommendations for decreasing the percentile of 30-day hospital readmissions. Fulfillment of the professional and ethical responsibility to provide the best care possible and nursing job satisfaction are at stake. In addition, it is crucial to have an administrative champion behind any health care project or improvement effort. According to Williams et al. (2014), a lack of administrative support when undertaking a health care project is a major barrier to success as new policy development will be at the approval of administration. If successful, administration will reap the project reward of recognition for improving and providing excellent health care. Administration's influence and potential impact on budget and policy making along with the gain from recognition for health care quality improvement make this a group of ideal stakeholders.

A fifth group of stakeholders is the information technology department. They will be affected by the use of personnel to gather data and to create any new electronic documents necessary for project implementation such as a discharge template. The information technology manager also needs to be aware of the project and the possible role that staff will play for planning and budgeting purposes.

The last group of stakeholders involved is quality management. In their 2001 health care quality report, the Institute of Medicine stated, "Between the health care we have and the care we could have lies not just a gap but a chasm" (p. 1). Nurses are identified as being in a prime position to participate in improving health care outcomes by using evidence based practice defined as rigorous and systematic inquiry combined with clinical expertise and patient values (Duke University Medical Center, 2018).

Hospital readmissions within 30 days of discharge are potentially harmful to patients and to families and costs billions in health care dollars each year (Institute for Health Care Improvement, 2017d). The discipline of nursing has an opportunity and an obligation to make a difference through the use of evidence based practice for forming recommendations following an in-depth analysis of organization specific patient profiles and analysis of current benchmarks both within and outside of the health care system. According to the Institute for Medicine (1990), quality consists of the degree to which health care services for both individuals and populations increases the likelihood that desired health outcomes are achieved and are consistent with current professional knowledge.

The project of examining all-cause 30-day preventable hospital readmissions has the potential to influence nursing practice. The benefits are potential improvement in nurse satisfaction with practice, improved patient outcomes, the ability to share findings with other facilities, and the highlighting of nursing's contributions to patient care. According to the American Association of Colleges of Nursing's Essential One for the doctor of nursing practice (DNP), the foci of nursing are the actions or processes by which positive changes in health status are affected (AACN, 2013). Leadership at the system or organizational level fulfills the obligations and responsibilities held by the DNP. In addition, by examining and making recommendations for use of a specialized model of care for patient transitions during and after hospitalization, nurses are exploring new models of care and expanding the knowledge base of the discipline. If the initiative to reduce the percentile of 30-day hospital readmissions is successful, the project holds

the potential to be used at other facilities, particularly VA facilities with similar demographics. It can also be used as a reference and guide for nurses working on similar quality projects to improve health care outcomes. Dissemination of best practices is a regular practice within the VA and channels are already established to accomplish the mission.

Potential implications for social change related to reducing 30-day all-cause hospital readmissions include improved health outcomes for patients, reduced illness burden on families, and reduced health care costs for society. According to Stone (2010), up to 30% of hospital readmissions are preventable. If the current number of readmissions can be improved, better health outcomes will result along with a reduced illness burden on families and communities and a reduction of health care costs by billions of dollars per year in the United States (Agency for Health Care Research and Quality, 2014b).

Summary

According to its 2001 report on quality in health care, the Institute of Medicine identified that nurses are in a prime position to participate in improving health care outcomes by using evidence based practice. *Evidence-based practice* is defined as rigorous and systematic inquiry combined with clinical expertise and patient values (Duke University Medical Center, 2018). Hospital readmissions within 30 days of discharge are potentially harmful to patients and to families and cost billions in health care dollars each year (Institute for Health Care Improvement, 2017a). An opportunity exists for nurses to make a difference by implementing evidence based practice following

an in-depth analysis of organization-specific profiles of those patients readmitted to the facility within 30 days of discharge. An analysis of patient profiles and current benchmarks hold the potential to be used to make practice recommendations.

Reducing 30-day all-cause hospital readmissions is a significant problem for the health care system from both quality and cost perspectives. The potential for negative physical, financial and psychological effects on patients, the diversion of medical resources and the billions of dollars in hospital costs create the focus on the quality metric on readmission rates. As frontline caregivers, nurses are in a position to make a positive influence on health care outcomes by reducing readmission rates. Through examination of patient profiles specific to the organization, common themes were identified and recommendations for improved care processes and practice models were made.

Thirty-day hospital readmissions clearly influence patients, health care, and society. A major initiative by the U.S. Office of Disease Prevention and Health Promotion (2017) as stated in the publication *Healthy People 2020* is preventing injuries and promoting wellness. Using frameworks for support, nurses are in a position to lead interdisciplinary teams in health care improvement inclusive of the hospital 30-day readmission rate. In the next section of this study, I examined the nurse's role in depth and defined the basis for this proposal.

Section 2: Background and Context

Introduction

Hospital readmissions within 30 days of discharge are a problem for patients, policy makers, and society and are considered a measure of the quality of health care provided within an institution (Leppin, 2014). In the year 2012, for Medicare alone, the costs directly related to hospital readmissions reached 17.5 billion dollars (CMS, 2017b). Readmissions occur in approximately 30% of patients and are often deemed preventable (Leppin et al., 2014). In addition, McHugh and Chenjuan (2013) found that readmissions within 30 days for heart failure, myocardial infarction, and pneumonia are common, costly, and often preventable. As a result, health care organizations measure and report this quality metric publicly. Higher percentile scores are considered a marker of poor quality inpatient care, disease severity, and ineffective hospital to home transitions (Garrison et al., 2016). Reduced CMS reimbursement, public disclosure of quality indicators, and the need to reduce overall health care costs have resulted in significant and ongoing focus on the 30-day hospital readmission quality metric.

According to the Centers for Medicare and Medicaid (2017a), the 30-day hospital readmission metric is defined by readmission to a hospital within 30 days of discharge from the same or another hospital. Inclusion criteria include 18 years of age or older and a discharge to home or a non-acute setting. Exclusion criteria include discharge against medical advice, admission for a primary psychiatric diagnosis, admission for cancer treatment, and death discharges. Readmission data also exclude planned readmissions such as those for elective surgery or chemotherapy.

As a result of the Affordable Care Act in 2012, organizations were assigned financial penalties through the lowering of CMS reimbursement for disease cohorts such as heart failure, chronic obstructive pulmonary disease, acute myocardial infarction, elective total hip and knee replacements, pneumonia, and sepsis. CMS uses an excess readmission ratio to calculate the number of readmissions above the national average to determine financial withholdings. The ratios are endorsed by the National Quality Forum (CMS, 2017b) and include risk adjustments to improve comparison between hospitals. The hospital for which this project is the focus measures hospital wide *all cause* readmissions and measures are compared to other VA hospitals both regionally and nationally.

My aim in this doctoral project was to identify and analyze the patient care variables attributed to 30-day hospital readmissions in a specific health care organization as a means of determining areas for practice improvement. For this project, hospital wide readmissions were examined; this included but was not limited to the disease cohorts listed by CMS as those eligible for financial withholding. According to CMS (2017a), *quality health care* is defined as doing the right thing at the right time in the right way for the right person to achieve the best possible results. The metric was developed as a response to the need to measure quality for the purpose of improving it. Despite some disagreement in the appropriateness of using the readmission metric as a quality measure due to the diversity of variables within individual organizations (Pronovost et al., 2016), current consensus is to continue to use the measure as an indicator of health care quality.

Concepts, Models, and Theories

The organizational culture of the health care facility for this project is based on lean, a quality improvement philosophy and set of principles originated by the Toyota Motor Company. The philosophy has been in existence for many years and has recently been applied to the health care setting (Toussaint & Berry, 2013). Lean is based on the concept that eight types of waste exist in an organization. *Waste* is defined as nonvalue-added activity and includes unused human potential, waiting, inventory, transportation, defects, motion, overproduction, and processing. Lean focuses on eliminating waste thereby adding value. According to Toussaint and Berry (2013), the key to success in using this philosophy is for employees to have an open, questioning mind and a problem-solving outlook. A lean culture in health care is represented by an insatiable quest for quality improvement while controlling costs. One mechanism for operationalizing lean in the work place is the use of the PDSA model, a process improvement framework that allows for modification of interventions as work progresses. As a quality management initiative, this project on 30-day all-cause hospital readmissions was guided by the PDSA cycling model for continuous quality improvement.

The PDSA model was chosen because it provides a guide for systematic and logical progression toward project completion. The model allows for formative evaluation based on findings during project implementation and is a fluid model that provides for multiple attempts at success based on in-the-moment feedback. Using the PDSA framework for improvement involves continuously seeking to find the root of a problem (Kimsey, 2010). The approach started with planning (P), which consists of

identifying the variables that will be considered during the project; these include but are not limited to hospital length of stay, discharge education, medication complexity, age, gender, home support services, and disease cohort. During the planning stage I identified stakeholders and created a PDSA worksheet as a visual mapping of progress during this stage.

The next step of the process was collecting the data (D). In this phase, I developed a spreadsheet with the appropriate evidence based variables for analysis. It was important to follow the planned steps and continue with project evaluation throughout this phase. The study (S) portion of the model guided the data analysis and formation of recommendations based on findings. In the final phase, act (A), I formulated recommendations for the team of stakeholders for quality improvement initiatives to reduce 30 day hospital readmissions. The use of the PDSA model allowed for feedback in-the-moment and for ongoing evaluation during the project rather than when it was complete.

Relevance to Nursing Practice

Thirty-day hospital readmissions have a negative impact on patients due to less than optimal health outcomes and even more of an influence on older adults who are vulnerable to hospital acquired infections and loss of function (McHugh & Chenjuan, 2013). The work to prevent 30-day hospital readmissions begins at the time of admission and nurses innately own the interventions used to prevent readmissions by virtue of their practice. In their study, Chenjuan, McHugh, and Aiken (2016) found that the nursing work environment, inclusive of perceived autonomy, staffing levels, and education, was

found to have a significant positive correlation with 30-day hospital readmissions for patients undergoing surgery. According to McHugh and Chenjuan (2013), nursing's presence on a 24-hour basis and during decisive moments in care offers the opportunity for them to prepare patients and families for discharge. Given the appropriate environment and support, nurses are positioned to provide the processes necessary for safe transitions of care including patient knowledge assessment, education, and care coordination.

As a whole, hospital readmissions have been a focus of health care organizations and policy makers due to the toll on patients and families as well as the cost to organizations and to society (McIIvenan, Eapen, & Allen, 2015). Nursing and the nursing practice environment have been found to have a positive effect on 30-day hospital readmissions (McIIvenan, Eapen, & Allen). When the environment supports nurses, they are able to do a better job at preparing patients for home by providing the education they need and arranging services for post-hospital care. By virtue of prioritization, health care organizations are in a position to improve nursing work environments and indirectly reduce hospital readmissions. One such undertaking to improve nurses' work environments is the achievement of magnet recognition (American Nurses Credentialing Center, 2018), an external validation of internal nursing excellence and its associated principle of promoting quality by supporting professional nursing practice. Organizations that seek to improve the nursing work environment experience decreased 30-day hospital readmissions for heart failure, pneumonia, myocardial infarction and many types of surgeries (McIIvenan, Eapen, & Allen, 2015).

Nursing interventions that involve multiple components and increase patients' ability for self-care have been found to be most effective in preventing 30-day hospital admissions while evidence exists that singular discharge planning interventions are largely ineffective (Kripalani et al., 2014). The combination of enhanced communication, advanced care planning, medication safety, and patient education have been identified as having an effect on decreasing hospital readmissions (Kripalani et al., 2014). Nurses are involved in all of these interventions though there is data lacking on the effect nursing alone has on readmissions. As the number of transitional care interventions and the body of knowledge on readmission prevention grows, we are likely to find that the role of nursing is a powerful component of safe transitions and in reducing 30-day hospital readmissions.

A doctoral project on identifying the specific attributes of patients who have been readmitted to the hospital within a 30-day window may lead to more effective interventions aimed at keeping patients safely at home. Evidence may lead to the use of a new model of nursing care for hospital discharges. The development of a new framework to guide discharge planning specific to an organization's needs may help with replication of nursing practice within the organization and may serve as a guide for other practitioners interested in developing similar organization-specific frameworks.

Local Background and Context

The health care organization for this doctoral project currently falls within the top fiftieth percentile for all cause 30-day hospital readmissions among similar organizations. To improve quality of care and to reduce costs, both of which are directly related to

organizational strategic goals, it is the aim of the organization to improve 30-day readmission rates to within the bottom tenth percentile. Current hospital discharge practice for every patient includes multidisciplinary discharge planning. This is led by a dedicated discharge planning nurse and includes providers, social work, therapists, and nurses. Discharge preparation includes medication reconciliation, disease management and medication education on the day of discharge, a discharge follow-up telephone call, and a prearranged primary care provider appointment. Specific cohorts of patients, for example those who fall under the CMS recognized preventable conditions and those who are frail may have additional services on discharge such as home telehealth, visiting nurse services or care transitions telephone counseling by a nurse for 6 weeks on return to the home. These interventions are taken from research and have evolved over the past several years based on their effectiveness. A question remains as to the gap in current practice that results in this specific organization's score in the top fiftieth percentile according to the past year's data.

Improving quality of care and fiscal responsibility are foci of the organization and are imbedded in the strategic goals for the next several years. The organization is certified by The Joint Commission making quality of care not only a moral obligation but a priority based on regulatory compliance and competition for market share. As a non-profit government funded organization, the hospital is held to a standard that must be acceptable to its target population and the citizens of the United States.

Role of the DNP Student

I am a staff nurse with aspirations to work in quality management based on the many challenges and changes required to improve today's health care system. Specifically, I want to work in an environment where I can translate research evidence to practice and help others to do the same in an effort to improve health care outcomes. I chose the 30-day hospital readmission quality metric because it has been identified as an organizational area of importance in need of improvement. Decreasing 30-day hospital readmissions appeals to me because I take part in patient discharges and seek to improve the process so that the health of patients is optimized and they remain safely at home.

The role of the DNP student is to answer the practice focused question determined at the onset of the project: Which common patient or environmental variables can be found among patients readmitted within 30 days of hospital discharge? Now that this question is answered, findings will be presented to the stakeholder group and best practice recommendations suggested to the organization's leadership. Recommendations that result in lowering readmission rates will potentially be included in policy.

As a DNP student in a practicum experience, I am in the learning process. I realize that helping to improve a quality metric along with advancing my education is the starting place for the remainder of my career. As a lifelong nurse and nursing advocate, I am anxious to demonstrate how nurses can make a difference and to highlight the value we bring to health care. I consider quality management a dynamic specialty and see it as an avenue for nursing to make a significant impact on improving health care outcomes. Though non-nursing personnel have the ability to perform quality management work, my

bias is that the best experts for this area of practice are those that own the depth and breadth of nursing knowledge and experience.

In the next section of the project, I gathered evidence and collected data for the analysis of all-cause 30-day hospital readmissions.

Section 3: Collection and Analysis of Evidence

Introduction

Hospital readmissions account for more than 41 billion dollars in added health care costs in the United States (AHRQ, 2014a) and are associated with poor quality inpatient care, disease severity, and ineffective hospital to home transitions (Garrison et al., 2016). My aim in this project was to closely examine the quality metric of hospital wide all cause 30-day readmission rate for a specific health care facility. The medical center has a current readmission rate greater than the fiftieth percentile and the goal was to determine variable(s) affecting performance. Systematic evaluation of this performance measure resulting in recommendations for practice improvement holds the potential to improve health care outcomes, reduce illness burden on families and communities, and to reduce health care costs for society.

The 30-day hospital readmission metric was first developed by CMS as a response to the need to measure quality for the purpose of improvement and controlling costs. To establish the importance of improving the measure on 30-day hospital readmissions and to penalize those health care organizations that do not improve, CMS has begun withholding reimbursement for facilities with an excess readmission ratio after risk adjustment. In addition, readmission rates are publicly reported at the facility level on websites such as Hospital Compare (CMS, 2017c) as a quality indicator and a reference for consumers when choosing where to spend health care dollars.

The organization of focus does not fall under the purview of CMS financial penalties but uses the metric to measure quality of care in comparison to like facilities

within the healthcare system. To make improvements, the quality metric had to be fully understood and the variables to be measured identified. Once variables and baseline measures were determined, the plan for collecting retrospective patient and environmental data was carried out. Analysis included identifying common traits within the environment and among those patients that have experienced hospital readmissions within 30 days of discharge.

Practice-Focused Question

The practicum site is a three-campus urban medical center with a readmission rate in the top 50th percentile in comparison to like facilities. As a designated quality indicator, less than favorable ratings with 30-day hospital readmissions is considered a reflection of the quality of care provided and has a potential negative influence on the health care organization as the provider of choice (Leppin, 2014). The origin of the current problem is elusive to the organization, with a multitude of potential areas for examination in an improvement effort based on current research. To facilitate improvement, the aim of this project was to identify common patient and environmental variables for those patients who were readmitted within 30 days of hospital discharge with the goal of decreasing the 30-day hospital readmissions to the bottom 10th percentile when compared to similar organizations (Assistant Director of Quality Management, personal communication, February 10, 2018).

Current literature cites multiple variables that have been shown to affect 30-day hospital readmissions. These variables, which involve both patients and the environment, were examined for commonalities. Variables included disease cohort, family support,

medication complexity, post hospital provider appointments, age, post hospital follow-up phone calls, patient education, and the use of post hospital services in the home. I collected data for these variables using de-identified patient information and tracked them using an Excel spreadsheet. Disease cohort was determined by the admitting and readmitting diagnostic codes. Documentation of family support included those patients with family living in the home. The number of medications was measured. Post hospital provider appointments included those within 2 weeks of discharge. Patient education included whether disease-specific and home care instructions were provided, and posthospital services included visiting nurses, home telehealth and the coordinated transitional care program (C-Trac).

Exclusions from the data included patients living in skilled nursing facilities, those discharged against medical advice; patients admitted for a primary psychiatric diagnosis and planned readmissions such as those for chemotherapy or elective surgery. One of the initial steps in the collection process was to validate the organizational data. According to Needham et al. (2009), quality improvement projects are typically conducted with substantially fewer resources, which potentially affects data quality. Data validation was done through careful examination of individual patient records and the comparison of organizationally reported data with in-person findings. Any discrepancies were discussed in-depth with a coding specialist.

Sources of Evidence

The source of evidence I used to address the practice focused question was deidentified patient data from the computerized medical record; I obtained permission to

examine the data at the facility level. Other sources of evidence included current research retrieved from scholarly databases and government websites such as the Agency for Health Care Research and Quality, Hospital Compare, and CMS. I obtained VA specific data from the VISN Support Services Network (VSSC) databases and data analytics cubes.

The collection of patient data was necessary to determine which variables patients and the environment had in common during and after the discharge process. These commonalities were potentially the source of recommendations for improvement. Using the computerized patient record to retrieve the data was necessary to obtain the detail needed for this project. Areas of interest such as level of home support and presence of a post hospital follow up primary care visit cannot be found in any other documentation. The patient record was the most valuable source of information for determining variables related to hospital readmissions.

I used research from scholarly databases to determine which of the 30-day hospital readmissions variables to examine. Much research has been done on readmissions in regard to variables with a positive correlation to 30-day readmissions. Variables for this project were chosen based on the frequency for which they have been studied and have shown to improve health outcomes. An example of this is the number of medications patients are prescribed. Lower medication complexity has been shown to correlate with better health outcomes (George et. al., 2004). Reducing medication complexity at discharge may result in decreased hospital readmissions while increasing

the number of resources and/or interventions for high scoring patients may decrease hospital readmissions.

Data and research from government websites such as the AHRQ was used to better understand the metric and gather the most recent research findings in regard to progress on improving the 30-day hospital readmissions metric. Collection and analysis of research studies and data lead to the identification of common patient and environmental variables. Identification of common variables lead to an in-depth examination of the discharge process and to recommendations for interventions to improve the process thereby improving health care outcomes.

The nature of the data for this project was patient data in the context of the discharge process within the organization. I extracted data from the existing records of those patients who experienced a hospital readmission within 30 days of discharge. Data originated in the computerized documentation of caregivers who interacted with the patient on admission and during the hospital stay. Data collected from the chart ranged from demographics such as age to services appropriated at discharge such as nursing care at home.

Data derived from the patient record was directly relevant to the focus of this project, as without identification of the common patient and environmental variables there is not enough information to form possible interventions for improvement. Without the data from patient records, we would essentially be guessing at what would be effective. The information gained from data collection formed a base from which

possible interventions were recommended and can be trialed and then revised based on outcomes.

Documentation in the patient record by care providers is the standard process for inpatient care. Items from the documentation that are relevant to discharge can be extrapolated for use in quality improvement projects to improve care outcomes. As a standard procedure, data are collected and entered into the record in template or note form by healthcare staff. Potential limitations of the data collected included incomplete entries and incorrect diagnoses. Potential database source limitations included lack of validity such as with coding errors or under-reporting.

As a student, I was granted permission to use deidentified patient information prepared by the facility's director of quality management for privacy and protection purposes. I signed a data use agreement with the organization after receiving education on its use through an online course and attesting to the knowledge. As a secondary check for ethical protection, the Walden IRB reviewed the project prior to implementation.

Analysis and Synthesis

The major tool for tracking and recording data for this project was an Excel spreadsheet. Predetermined, standardized vocabulary was used to record patient and environmental variable components so that the information could be sorted and analyzed from different perspectives. Commonalities were documented and researched further. Patient charts with missing components were not included in the study. Data outliers were tracked separately and patterns noted. The coding of diagnoses for the original and

the subsequent 30- day readmissions was examined and compared to the data extracted in person to determine validity.

Summary

Research evidence tells us that improvements in the quality metric of preventable 30-day hospital readmissions are possible. Analyzing and synthesizing data specific to an organization is found to be more effective than generalizations among health care facilities as much variability exists across providers and geographic locations (AHRQ, 2014b). An effort to identify and better understand the areas needing improvement in a specific organization allows for an opportunity to improve the 30-day hospital readmission quality metric within that organization.

Section 4: Findings and Recommendations

Introduction

All-cause readmissions to the hospital within a 30-day window are a measure of quality in health care. According to Auerbach et al. (2016), up to 30% of readmissions are preventable. This cohort of preventable admissions has been the subject of much investigation with no definitive formula for resolution to date. Thirty-day readmissions to the hospital place a burden on patients, families, health care systems and society (Donze et al., 2017). The cost can be found in the toll illness takes physically and psychologically on patients and their families, the drain on health care system resources, and the enormous financial burden to society.

The subject of this quality improvement project was a multicampus health care system in a major metropolitan area with a 50th-percentile ranking in all-cause hospital readmissions. The goal for the organization is to perform in the top 10% when compared with similar facilities (Assistant Director of Quality Management, personal communication, February 10, 2018). A gap in practice exists as to what interventions will effectively decrease 30-day readmissions and increase quality of care. The practice-focused question was: Which common patient and environmental variables can be found among those readmitted within 30 days of hospital discharge? The goal of this project was to analyze the variables to identify commonalities that lead to possible interventions to fill the gaps in practice with the purpose of lowering the readmission rate within the organization and improving patient care.

A major source of evidence for the project was deidentified patient information obtained through an analytics data cube listing patient and environmental characteristics such as age, sex, admitting diagnosis, readmission diagnosis, days between discharge and readmission, number of comorbidities, services on discharge, whether a prearranged primary care provider appointment existed, and whether a nurse phone call was made to the patient within 48 hours of discharge. Patients readmitted to the hospital within 30 days of discharge were then separated from other discharges using the filter function in the Excel spreadsheet. Patient and environmental characteristics of those readmitted were extracted from the data and charted on a spreadsheet using standardized language. I extracted data from the three most recent fiscal quarters and reviewed a total of 233 readmission records.

Further sources of evidence included hospital policy where the organization's current process for patient discharges is outlined. The discharge process begins soon after admission by a floor-based nursing discharge planner. The discharge nurse meets with the patient to go over needs at home, functional status, and home supports. Together they form a tentative plan for discharge which is subject to change based on patient progress. A risk assessment using a data program is used to gauge outcome expectations and determine risk of readmission. Disease-specific education is given by floor nurses and charted sporadically in the patient record. On discharge day, the nurse reviews the patient's medications and discharge instructions. Services, if needed, are set up prior to discharge by the discharge planning nurse. If there is time, the discharge planner will also meet with the patient for educational purposes. Because of the unpredictability of the

discharge date and patient progress, this is not always accomplished. Once the patient is home, primary care provides a nurse phone call within 48 hours and validates a follow-up primary care appointment exists within 2 weeks of discharge.

As part of the research process, I developed a visual guide for the major steps in the discharge process. I studied current literature on 30-day hospital readmissions obtained through databases such as CINAHL, Sage Publications, PubMed, ProQuest, and the Cochrane Database of Systematic Reviews. I searched government and oversite websites such as AHRQ, IHI, and CMS with the terms 30-day readmissions, hospital readmissions, avoidable readmissions, and reducing preventable hospital readmissions.

Findings and Implications

Analysis began with examination of the organization's data for reliability. The health care organization uses the Agency for Health Care Research and Quality's Clinical Classification Software to define the 30-day all cause readmission measure. Patient conditions and procedures were defined using the standardized International Statistical Classification of Diseases and Related Health Problems (ICD-10/ICD-9). I performed a random chart review of 35 readmission records which revealed that the ICD codes were appropriately assigned. The writer acknowledges that subjectivity may be a factor in assignment of ICD codes because coders sometimes accept the physician assigned ICD code or develop their own based on provider, nursing and chart entries in the medical record (coding specialist, personal communication, June 26, 2018). This can be complicated further in a teaching facility with numerous residents using their judgement for coding in addition to the attending providers.

The health care organization of focus was ranked in the 50th percentile for 30-day readmissions when compared with similar facilities using the Strategic Analytics for Improvement and Learning (SAIL) data. The goal is a 10th percentile ranking among VA hospitals for all-cause readmissions. Of 3,490 hospital admissions during the 3 most recent fiscal quarters, 515 or 14% were readmitted within 30 days of discharge. Analysis of patient characteristics for those readmitted to the hospital within 30 days of discharge revealed few commonalities. Age, number of comorbidities, the presence of support at home, or admitting diagnosis did not reveal patterns, and this finding came as a surprise. What stood out was the disparity between the admitting diagnoses and the readmission diagnoses. On average, only 23% of patients were readmitted for the same or similar diagnoses; the vast majority (77%) was readmitted for different reasons. Examples of this include readmission for the development of a clostridium difficile infection following a hospital stay for pneumonia, readmission for a pleural effusion following admission for renal failure, and readmission for gastrointestinal hemorrhage following an admission for spinal stenosis.

Environmental characteristics such as presence of a primary care appointment on discharge, a nurse follow up phone call, the medical service cohort and the calculated risk probability of readmission also revealed no significant patterns. A total of 98 of the 515 readmissions were assigned the organization's highest risk probability score of 21 to 30; only 19 of those readmissions were for the same diagnosis. The low scores demonstrated for same-diagnosis 30-day readmissions provided evidence the organization is doing well in assigning resources to patients in the disease cohorts deemed readmission preventable

by CMS (2017b) such as congestive heart failure, myocardial infarction, and chronic obstructive pulmonary disease. The largest population, patients returning to the hospital within 30-days of hospitalization with a second, unrelated diagnosis may be indicative of the frailty and susceptibility of patients who have been recently hospitalized. It may also be indicative of gaps in practice, or perhaps both. The Reducing Avoidable Readmissions Effectively Campaign (Institute for Clinical Systems Improvement, the Minnesota Hospital Association, and Stratis Health, 2017), a successful collaborative health quality initiative, found that there are five key effective areas or approaches to reducing hospital readmissions. These areas are comprehensive discharge planning, transition care, transition communication, patient and family engagement in care and medication management.

Based on the notable finding of readmissions being largely unrelated to the index admissions, noted gaps in practice for the organization include patient and family education directed at the *whole person* rather than the admitting diagnosis and closer contact and follow-up by primary care staff once the patient returns home. Both of these interventions have been shown to decrease hospital readmissions (IHI, 2018b) and could potentially close the gaps in practice left by current patient education that is narrowly focused on the admission diagnosis and the practice of minimal primary care follow up and support once the patient is back in the community setting. These findings have the potential to inform and improve the discharge process for the organization and potentially decrease post hospital readmission rates.

Hospital readmissions are frequent, costly, and use precious health care resources. Preventable readmissions represent a threat to patient safety in the form of adverse drug events, procedural complications, infections, falls, and disease exacerbations (Donze et al., 2013). For individual patients, decreasing hospital readmissions creates the possibility of a reduction in both physical and emotional stress due to repeated hospitalizations and ongoing illness. For families, it indicates a potential shortened care burden both financially and emotionally. For health care systems, reducing readmissions indicates an improvement in the quality of care provided, a reduction in hospital costs, a reduction in resources used and an improved standing among peers in competition for market share. For society, a reduction in harm to patients helps move populations further toward the *Healthy People 2020* goal of preventing illness and injury (Office of Disease Prevention and Health Promotion, 2018).

Recommendations

Based on analysis and synthesis of the data, improvements within the organization can be recommended for more intensive whole person patient education that includes information on care of comorbidities and potential post discharge complications. Education should occur while the patient is still in the hospital and must include the family where relevant. Improvements include closer monitoring and communication in the home setting by the primary care team once the patient is discharged to home.

Hospital discharge is increasingly identified as a time of vulnerability for patients (Coleman et al., 2013). Empowering individuals with the ability to care for themselves through partnering and education is part of the new Whole Health model (Department of

Veterans Affairs, 2018) for patient care within this health care organization. Implementation of the model has begun in some areas of the hospital but has not spread to patient transitions of care. Any changes to discharge incorporating the principles of Whole Health (Department of Veterans Affairs) to improve the discharge process will make a positive difference. Treating the whole person instead of a disease involves relationships. These can be built by starting a partnership with patients and their families in the primary care setting prior to an admission. Partnering with providers to form patient-centered health care goals may ease the transition from hospital to home. An ongoing team atmosphere with the patient at the center of the team is a foundation on which to build a partnership for better care. We must move from a provider or organizational centric discharge process to one of patient-centeredness (Greyson et al., 2017). Improving patient transitions from hospital to home and empowering patients and their families as important members of the health care team may contribute to positive social change as improving health and preventing injury is a major current global focus and concern (Office of Health Promotion and Disease Prevention, 2018).

Further recommendations include an increase in patient and family engagement and education starting on admission to the hospital. Education should focus not only on the admission diagnosis but on co-morbidity care for chronic illnesses and signs of potential complications for which to seek early medical attention. Nurses at present are busy performing task- oriented patient care. The recommendation is to have nurses with specialized training in patient education employed to meet with each at risk patient during their hospital stay to engage and accomplish mutually determined educational and

self- care goals. Recommendations for transition also include a discharge checklist, a multidisciplinary document used to help organize and ensure completeness of each hospital discharge (Institute for Clinical Systems Improvement, the Minnesota Hospital Association, and Stratis Health, 2017). The discharge checklist helps ensure all important aspects of the discharge are completed by the end of the patient stay.

Another, perhaps more important recommendation, is more intensive follow up with primary care once the patient is home. According to Greyson et al. (2017), at least as much emphasis should be placed on post- acute support as there is on discharge preparation in the hospital. At present, a discharge phone call is made within 48 hours by a nurse care manager who ensures that an appointment with the primary care provider has been arranged. Data for the organization demonstrated that most readmissions to the hospital happen far beyond the 24- to 48- hour time frame of the discharge phone call. The phone call focuses on the admission diagnosis with little mention or focus on co-morbidities and potential complications. Recommendations include a new protocol for additional nurse phone calls at one and two weeks post transition as the vast majority of readmissions do not occur within 48 hours following discharge. If needed and based on nursing judgement and patient Care Assessment Need (CAN) acuity scores, a nursing clinic visit to review medications and check on well-being can be arranged. More intense protocols following patients' progression in the community have shown improved care and decreased incidence of readmission within a 30-day window (IHI, 2018b).

Strengths and Limitations of the Project

A strength of the project was the amount of data used for analysis. Three quarters of a year of data on patient discharges yielded thousands of discharges and hundreds of 30-day readmissions. The number of records reviewed (233) adds strength through validation of information. A second strength was the amount of previous work on 30-day hospital readmissions from which to draw information. The richness of the research available made it easier to evaluate the health care organization of focus and to develop recommendations based on results from reliable findings in previous work.

A weakness of the project was the lack of qualitative data. The rich information to be gained from patients and their families has the potential to contribute much to the recommendations for improvement. Tailoring of information for education, what constitutes the *whole person* in the context of a hospital discharge and transition to home is of interest. Exactly what is valuable to patients and families during the transition and what is important to them in regard to their health is unknown.

Recommendations for future work on 30-day hospital readmissions include a reassessment following implementation of the recommendations and looking further at the relationships between patients readmitted within 30-days with different diagnoses and the use of the Whole Health model of care (Department of Veterans Affairs, 2018). Once that more intensive and global education is provided during the hospital stay and primary care staff follows the patient more closely in the community, it would be beneficial to measure the readmission rates and reassess the disparity in admitting diagnoses and readmission diagnoses so that, if successful, other facilities could use the same

interventions. Once the Whole Health model (Department of Veterans Affairs) of care is in place for primary and inpatient care, further work can be done with examining whether or not there is a relationship to readmission rates. Last, future work on 30-day readmissions should include patient and family interviews for additional data. The value of patient and family input in regard to education and factors that affect success in the community cannot be underestimated.

Section 5: Dissemination Plan

According to Williams and Cullen (2016), it is through effective dissemination that knowledge is shared and duplication of work is eliminated. When I planned for the dissemination of the project on improving 30-day readmissions, the audience was taken into consideration. The audience will include the project and practicum preceptor who is the associate direct for quality in the organization, the director of nursing education and the chief nursing officer. Quality staff and data analysts currently working on a related project for ambulatory care sensitive conditions will also be invited. Audience members hold leadership and administrative positions within the organization and have the ability to implement or reject recommendations for practice change.

I will present project findings and recommendations using a Microsoft PowerPoint program. Presentation to stakeholders will take place in a quiet, uninterrupted venue. The value of the changes to the organization in terms of improved quality and potential decreased costs will be emphasized. It will be important to point out that the recommendations and findings are patient-centric and align with the organizational strategic goals of improving patient care and fiscal responsibility and also align with the new Whole Health model of patient care within the VA.

The project has potential to be shared with nurses who want to improve 30-day readmissions in their own organizations. Sharing of this knowledge could lead to changes in practice, ideas for further investigation regarding readmissions and changes in nursing models when it comes to transitions of care. Venue possibilities for sharing the information include publishing the project in the SAGE database as planned, placing it on

the VA best practices website and presenting it as a poster during nursing meetings and educational programs. If the project recommendations are successful, this project could be published in a nursing journal for more widespread accessibility.

Analysis of Self

I was intimidated when I first started the project, thinking maybe it did not make sense or was not worth the time or maybe it was not good enough for others to read. As I progressed slowly through, I realized that there is value in the work I have done and even if it is a small audience, there will be people who find this information valuable. My hope has always been to improve patient care for a larger venue than that of one-on-one practice and this was one of a thousand possible ways to do so. I do hope that it will have demonstrated positive outcomes one day because it was work with a purpose. I would like to give some of what I have gained back to the profession of nursing and this type of improvement effort as a result of advancing my education is the venue I have chosen.

My confidence has grown as my education and the fruit of it in this project have unfolded. I am now a scholar-practitioner with a lot to give going forward. I have gained confidence in my ability to make a difference and have found that I can develop and manage a project relative to nursing best with the experience that comes with practicing nursing. My goal is to continue this type of work and improve care for larger populations. This project has provided an ideal starting place for the remainder of my career.

Completing the project came as something of a surprise; I was so attuned to thinking about it and working on it that I found it hard to believe it was finished. One of the best things about finishing is that I can move on to new challenges; I can also come

back to make improvements and expand on this one. A challenge to completion was getting assistance with data. Each member of the organization is busy with their own work and projects and not always available without a wait. I have learned it is best to build potential wait times into a project so it does not affect the timeline. As previously mentioned, a second challenge was believing in me and my ability to accomplish this project. I have come to know through growth and experience that this type of work is not perfect and whatever is accomplished leaves room for others to continue to explore. Knowledge is a legacy that can be left as a foundation for future generations of the profession to build on.

Summary

Thirty day hospital readmissions are a health care quality problem that has no resolution to date, though it is not for a lack of trying. The body of research and work done on the subject is enormous and every effort has been made to improve quality and decrease costs based on current evidence. I am convinced that nurses hold the key to improving this quality metric and decreasing the number of preventable hospital readmissions that still occur too often. Transitions in care mark a vulnerable time for patients. Nurses have direct access as well as the knowledge and expertise to minimize the vulnerability and help strengthen patients and their families through engagement and implementation of meaningful protocols that are based on data. This project adds to the body of knowledge that exists on 30-day hospital readmissions and is specific to one organization. The possibility exists that the resultant recommendations for practice can make a difference in this and other health care organizations.

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