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Transition of Care to Decrease Hospital Readmission After Acute MI

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Walden University

College of Nursing

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Patricia Yoon

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Walden University
2021

Abstract

Transition of Care to Decrease Hospital Readmission After Acute MI

by

Patricia Yoon

Project Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Nursing Practice

Walden University

May 2021

Abstract

The time period after an acute myocardial infarction (AMI) can be overwhelming for patients; while glad to be discharged from the hospital, they may not have the knowledge nor resources to properly manage secondary prevention measures and treatment of residual coronary artery disease (CAD). The gap in nursing practice this project addressed is the lack of follow up of care leading to increased rates of readmission. The goal of this quality improvement (QI) initiative was to evaluate pre/post data and synthesize results to make recommendations for possible practice change whether a 30-day transition of care program could decrease readmission rates for patients with a recent AMI compared to prior standard of care. The readmission rates were compared pre- and post- implementations of an NP led AMI readmissions reduction program. De-identified data revealed an average of thirteen AMI readmission prior to the implementation of the AMI transition of care program, compared to an average of fifteen readmission post initiation of the QI project. Findings from the independent samples t-test showed p-value was greater than 0.05, the care program did not decrease readmissions rates, suggesting no effect on the readmission rates in patients with a recent AMI. However, the initial results of the AMI program may have been limited by the current coronavirus pandemic. Given the limited data set during this study, findings indicate further research is needed to fully evaluate the effectiveness of the AMI program. There is growing consensus regarding the need for social practice change to improve transition of care interventions to reduce preventable readmissions and improve quality of life among patients who have experience an AMI.

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Dedication

I dedicate this paper to smartest woman I know. She landed halfway around the world with only an elementary school education. Her passion for knowledge was crushed by war, famine, and gender inequalities. Nevertheless, through her faith and love of coffee, she raised two strong women, both surpassing baccalaureate education. Umma, you have always engrained the importance of academics, but I think I'm done for a while now!

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To the AMI program team, you guys did all the work and I'm getting all the credit! Thank you for your support and guidance throughout my professional and academic journey.

Last but always first, thank you Jesus! Your steadfast love endures all.

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Section 1: Nature of the Project

Introduction

Despite improvements in mortality related to acute myocardial infarction (AMI) over the past several decades, the complex medication regimen, the need for repeated follow-up, and the frequency of recurrent events places AMI patients at high risk for early readmission (Marbach et al., 2018). Hospitals need to develop methods to provide a seamless transition from hospital to home to prevent adverse events for patients, including readmission. This Doctor of Nursing Practice (DNP) quality improvement (QI) project evaluated a comprehensive AMI transition of care program aimed at providing post-discharge resources with the goal of decreasing readmission rates. By applying evidence-based practice into everyday practice, this project supports Walden University's mission to promote positive social change by promoting programs investing in a healthy community (Walden University, 2020, Social Change).

Problem Statement

In 2009, as part of the Patient Protection and Affordable Care Act, the Centers for Medicare and Medicaid Services (CMS) began reporting 30-day readmission rates for AMI, pneumonia, and heart failure (HF) on its website (CMS, 2020). The Hospital Readmission Reduction Program (HRRP) was designed as a Medicare value-based purchasing program that decreases payments to hospitals that have disproportionately high readmission rates (CMS, 2020). Beginning in 2012, the HRRP assessed penalties based on a hospitals' performance on six conditions or procedures including AMI, chronic obstructive pulmonary disease (COPD), HF, pneumonia, coronary artery bypass

graft surgery, elective primary total hip arthroplasty, and total knee arthroplasty. Since the program began, the penalties have increased from 1% to 3% (or a factor of .97) for hospitals with excessive readmissions (CMS, 2020). The policymakers' intent of publicly reporting quality measures including readmission rates was to increase transparency of the quality of care delivered by hospitals.

Transparency of quality indicators empower consumers of healthcare to choose organizations that offer superior care as well as provide benchmarks for hospitals engaging in QI efforts to reduce readmission rates (Upadhyay et al., 2019). The evaluation of chest pain accounts for more than eight million emergency department (ED) visits annually, the second most common reason for ED visits in the United States (U.S.). Many of the 8 to 10 million patients who present annually to EDs in the U.S. with possible AMI are admitted for further observation and cardiac testing (Frisoli et al., 2017). For AMI, hospital readmissions within 30 days of discharge (30-day readmissions) are associated with increased mortality and health care costs (Southern et al., 2014). Concurrently, patients are experiencing shorter hospital length of stay (LOS) leading to less time for effective patient education, potentially contributing to misunderstanding of discharge instructions and increased risk for adverse events after discharge. Approximately 20% of discharged patients will experience at least one adverse event after discharge including readmission (Bath et al., 2019). Adverse events post discharge have been linked to inadequate or misunderstood discharge education, medication compliance issues, and missed follow-up appointments (Bath et al.,

2019). The time of transition from inpatient care to home is crucial for providing the information and resources to ensure successful care outside the hospital.

This doctoral project holds significance for nursing practice because it gave recommendations to close current gaps in practice. The gap in nursing practice this QI project addressed is the lack of follow up of care leading to increased rates of readmission. This QI initiative evaluated whether a 30-day transition of care program can decrease readmission rates for patients with a recent AMI compared to prior standard of care. Prior standard of care included recommendation for a 2 to 4 week follow up with primary provider and/or cardiologist. The transition of care program included a telephone call by a nurse or nurse practitioner (NP) 3 to 5 days post discharge, again at 14 days post discharge, and lastly at 30 days post discharge. Telephone calls reinforced discharge instructions, including wound care, medication adherence, lifestyle modifications, and appropriate follow up with medical professionals.

Purpose Statement

The gap in nursing practice this QI project focused on was a 30-day transition of care program for patients discharged with a primary diagnosis of AMI. The practice-focused question this DNP QI project addressed was: Can a 30-day transition of care program decrease readmission rates for patients with a recent AMI compared to prior standard of care? With an overwhelming need for hospital throughput, decreasing patient LOS along with rapid discharges has led nurses to spending less time with patients to discuss discharge instructions and coordinate proper follow up. De-identified

data, provided by the project site, was analyzed to compare pre and post QI intervention readmission rates.

Nature of the Doctoral Project

The sources of evidence for this DNP QI project was derived from a literature review using Walden University Library, Google Scholar and Cochrane, ProQuest, CINAHL and PubMed databases. This QI evaluation project was planned based on various professional experiences, learning resources from medical conferences and other QI evaluation projects from peer-reviewed journals and books, Centers for Disease Control and Prevention, CMS, and the U.S. Department of Health. The relevance and strength of the literature was analyzed by using the American Nurses Credentialing Center's level of evidence rating system (Peterson et al., 2014). The literature search terms for this project include *AMI*, *STEMI*, *NSTEMI*, *discharge*, *readmission*, *transition of care*, and *quality improvement*.

For this DNP QI project, I evaluated an existing QI project to decrease post-AMI readmissions. This QI project was designed to evaluate effectiveness of de-identified data of patients with a discharge diagnosis of AMI provided to me by the QI coordinator at project site. The archival patient data de-identified was from 3 months pre and 3 months post QI intervention. SPSS was used to perform a two sample pre/posttest t-test to look for a statistically significant change in readmission rates in patients with a discharge diagnosis of AMI pre and post intervention.

This DNP QI project was conducted in an urban medical center in the Northeastern region of the U.S., which performs emergent and non-emergent

percutaneous coronary interventions (PCIs) for ST-segment elevation myocardial infarction (STEMI) and non-ST segment elevation myocardial infarction (NSTEMI). The aim of this project was to evaluate effectiveness of a 30-day transition of care program on readmission rates for patients with a recent AMI. The project involved the evaluation of de-identified data of patients with a discharge diagnosis of AMI readmitted to the hospital 3 months pre-intervention and 3 months post-intervention provided to me by QI coordinator at the project site. The rationale for this evaluation was that as an organization with a large volume of AMI admissions, this institution would be able to facilitate a QI initiative to decrease readmission rates in this cohort of patients.

Significance

By generating new recommendations for practice change, stakeholders would be positively affected. They include consumers of healthcare, the organization, and the profession. Consumers of healthcare would benefit most from recommendations this project potentially creates. AMI remains one of the leading causes of death and disability in most developed countries (Lobo et al., 2020). The post-AMI stage can be overwhelming for patients; while glad to be discharged from the hospital, they may not have the knowledge nor resources to properly manage secondary prevention measures and treatment of residual coronary artery disease (CAD). A transition of care program creates a healthier and more educated consumer. Engaging patients in the home promotes self-care and management of chronic disease outside of the hospital.

This DNP QI project can potentially improve nursing practice not only by improving the transition to home after discharge, but also by increasing medication compliance, decreasing missed follow-up appointments, and reducing readmissions that lead to better patient outcomes (Bath et al., 2019). Patients with complex health conditions requiring care in multiple different settings have the most to gain from transition of care programs. Hospitals have begun to understand the driving forces behind readmission rates and the need for a successful transition of care program to be multidimensional, many have focused on disease-specific programs, such as AMI, COPD, and HF (Marbach et al., 2018).

Summary

The 2014 American College of Cardiology and American Heart Association guidelines on post discharge education plan of ST-elevation myocardial infarction patients include medication adherence, timely follow-up, dietary interventions, cardiac rehabilitation, compliance with intervention to prevention and reassessment of arrhythmias and HF (Prejean, Din, Reyes, & Hage, 2018). European Cardiology Society Guidelines recommend close follow-up for post PCI patients, but do not specify when to follow up (Prejean et al., 2018). It is imperative for organizations and clinical providers to better coordinate patient care and have early recognition systems in place to avoid readmissions. Improving transitions of care between the providers and care setting, as well as improving patient education to increase the self-management efficacy, can assist in reducing preventable readmissions (Lopez-Lopez et al., 2020).

Section 2: Background and Context

Introduction

The current lack of follow up of care was leading to an increased rate of readmissions for patient who have had recent AMIs. The practice focused question was: Can a 30-day transition of care program decrease readmission rates in this population compared to prior standard of care? This doctoral project evaluates the above-mentioned QI initiative, disseminates its findings, and proposes new practice guidelines to close gaps in current practice and to improve patient care. In this section, I review the background and context of DNP project, establishing terms used and defining the roles of those involved in the DNP project.

Concepts, Models, and Theories

Outcomes are often used to assess and improve the quality of care, because outcomes can be quantified through data collection it is thought of as a less biased and measure of quality of care (Ayanian & Markel, 2016). In the 1960s, Donabedian conceptualized the entire field of quality measurement in health care; his seminal work continues to represent a reference model to guide quality and performance measurement in health care (Lenzi et al., 2020). I used the Donabedian model as a theoretical framework for this DNP project. Donabedian emphasized three major elements of the study of quality of care: process, structure, and outcome (Donabedian, 1968). Process can be defined as what clinicians do and the services provided. Structures of care may be thought of as the demographic characteristics, training, and experience of the care providers and the environment in which they work. Outcomes are the results of care; it

indicates effects and consequences of any given care on health condition (Donabedian, 1979). According to Donabedian (1990), the most efficient and efficacious way to redirect resources would be toward those processes and structures of care that have been demonstrated to have the greatest effect on patient outcomes.

In efforts to improve hospital throughput, Kuczero and colleagues (2021) used Donabedian's framework to evaluate a new bed reaggregation initiative. The three overarching aims of the project were to increase access and treat more patients, reduce patient waiting times, and increase payment for services (Kuczero et al., 2021). As part of process, it was imperative to evaluate whether nurses on the reaggregated units felt competent caring for a new patient population and if they supported the bed reaggregation, ensuring sustainability. In terms of structure, the patient placement algorithm aligned with the restructuring of the inpatient units during the bed reaggregation and was structured to assign patients in a primary or secondary unit. The primary unit is identified as the unit the patient should be placed on based on the admitting diagnosis. Outcomes, as they relate to the Donabedian framework, reflect the impact the improvement or change has on the patient. It is also reflective of the program to achieve its goal. A key recommendation by the group was centralized bed management, the process by which all requests for beds and the supply of available beds are managed by a single function. The group found that cohorting patients in specialized units increased provider efficiency by decreasing travel time between units for specialized service lines and therefore decreasing LOS for patients (Kuczero et al., 2021). Cohorting patients in specialized units also increased the expertise in nursing care and

patient education, leading to better informed patients thus leading to decrease in readmissions for patients admitted to specialized units (Kuczero et al., 2021).

After the acute coronary insult of an AMI, the residual CAD which remains requires chronic medical management. CAD has a high prevalence of modifiable risk factors; effective risk factor management may substantially reduce the pace of morbidity and mortality and, eventually, improve health and quality of life, all of which being rooted in the concept of self-care (Toy Yildiz & Kasikci, 2020). The ultimate success in reducing hospital readmissions lay in the patients' hands. Orem's self-care deficit nursing theory (SCDNT) considers each individual as a self-care agent with the necessary ability to perform self-care activities individually (Khademian et al., 2020). Toy Yildiz and Kasikci (2020) found that Orem's SCDNT-based training program was an effective approach to preventing disease progression, reducing recurrent hospitalizations, and improving self-care agency and quality of life.

Terms Used

The following terms are listed to clarify frequently used terms in this DNP project:

AMI: Acute myocardial infarction, also called heart attack, is the rapid development of myocardial necrosis (i.e., the death of an area of heart muscle) due to prolonged myocardial ischemia, which results from a disruption in the balance between oxygen supply and demand. The term "acute" refers to infarction that is less than 3 to 5 days old (Aydin et al., 2019).

CAD: Coronary artery disease is the most common type of heart disease in the United States. CAD is caused by plaque buildup in the walls of the arteries that supply blood to the heart (called coronary arteries) and other parts of the body (Centers for Disease Control and Prevention [CDC], 2019).

HRRP: The Hospital Readmissions Reduction Program is a Medicare value-based purchasing program that encourages hospitals to improve care coordination to better engage patients and caregivers in discharge plans, with the goal of reducing avoidable readmissions. The program supports the national goal of improving health care by linking payment to the quality of hospital care (CMS, 2020).

PCI: Percutaneous coronary intervention is a reperfusion procedure used to treat blocked coronary arteries. PCI involves advancing a catheter usually through the femoral artery into the coronary arteries, balloon inflation at the occlusion site, and stent placement to restore cardiac blood flow (Aydin et al., 2019).

Relevance to Nursing Practice

In 2007, the Medicare Payment Advisory Committee proposed a 2-step policy option of first including readmission rates in public reporting and then creating financial incentives for hospitals to reduce readmission rates. Then in 2010, the HRRP was enacted into law as part of the Affordable Care Act, with AMI when used as the principal billing diagnosis as one of the first three conditions included (McIlvennan et al., 2015). Since then, hospitals and greater healthcare organizations, to improve patient care and deter financial penalties, have established various bundles and algorithms to predict

and reduce 30-day hospital readmissions in patients with a recent AMI (Mellor et al., 2017; Wasfy et al., 2020; Zhang et al., 2020).

COPD is a progressive, life-threatening disease that is associated with many comorbidities, high health-care utilization, and high mortality rates (Miranda et al., 2020). While the goal of transitions in care is to maintain continuity of disease management regardless of the patient's location, persons with COPD often experience suboptimal transitions, often leading to preventable ED visits and hospital readmissions (Miranda et al., 2020). Thus, COPD is listed in the HRRP, as with AMI, various transition of care programs have also been utilized for this condition (Aboumatar et al., 2017). Evans and Usery (2020) highlight the importance of multidisciplinary approach to transition of care in patient with COPD. As new medications may be introduced during an inpatient admission and compliance with pre-existing medications also a factor in COPD admission, the group highlights the importance medication reconciliation and the role of the pharmacists in the admission and discharge process.

The gap in nursing practice this QI project addressed is the lack of follow up of care leading to increased rates of readmission in patients with a primary discharge diagnosis of AMI. I will evaluate whether this QI initiative of a 30-day transition of care program can decrease readmission rates for patients with a recent AMI compared to prior standard of care. While the gap to reduce readmission rates for various conditions is being addressed, the literature has not described a NP led transition of care program to reduce AMI readmissions. More research is needed to improve nursing practice in this

cohort. In this DNP project, I evaluate an NP led 30-day transition of care program to decrease hospital readmission after AMI.

Local Background and Context

Readmissions within 30 days of hospital discharge represent a substantial and potentially preventable burden on the health care system (Thompson et al., 2016). To incentivize hospitals to reduce hospital readmissions, the HRRP was developed to levy financial penalties against hospitals with higher-than-expected readmission rates relative to their peers for targeted conditions (CMS, 2020). The 30-day readmission measures created by CMS are risk adjusted to account for case mix differences between hospitals. These measures assume that, after risk adjustment, any remaining hospital-level variation in 30-day readmission rates are due to underlying differences in hospital quality (Thompson et al., 2016). Organizational leadership at the QI project site has identified readmission rates for patients with a recent AMI as being above the national benchmarks (see Table 2), thus creating new initiatives to reduce readmission rates in this population.

The CMS Hospital Compare website reports a wide range of quality measures, including patient experience, health care process and outcome measures, service utilization, complications, and Medicare payments (Hu et al., 2017). Quality measurement includes the provision of the data that purchasers of healthcare may use to make intelligent choices, the examination of the effects on quality of care of the documented large variations in individual practice patterns, and to assess the relative efficacy of various types of health care delivery systems (Lenzi et al., 2020). The DNP project site has identified not meeting AMI readmission rate benchmarks, compared to

other local hospitals, thus establishing a taskforce to improve reduction in AMI readmission rates. The team conducted a QI project with a plan-do-study-act (PDSA) methodology to quickly identify and amend any unforeseen operational gaps. PDSA is an interactive model frequently used in QI initiatives as it quickly provides feedback to the current process and alterations can be easily incorporated into the cycle with minimal disruption (Institute for Healthcare Improvement, 2021).

Role of the DNP Student

As an NP at the project site, I am keenly aware of the challenges to improve readmission rates and improving patient outcomes. While not directly involved, I do have a good working relationship with the team that was selected to develop a 30-day transition of care programs for patients with a recent AMI. My role in this DNP project was to analyze de-identified data and present new recommendations for practice. My pre-existing relationship with project team may have presented as a potential bias to the QI project outcomes. However, I was not directly involved with the project site QI initiative; rather I was given de-identified data after the QI project team has collected their data.

The DNP Essentials outlines eight foundational competencies that reconceptualized advanced nursing practice to address the increasingly complex needs of a modern healthcare system. One of the essentials includes applying organizational and systems leadership for QI. Leadership is at the foundation of safe, efficient, patient-centered care. This essential prepares DNP prepared leaders to further nursing science by evaluating, translating, and disseminating research into practice (AACN, 2006). Key skills of this essential include the development of clinical practice guidelines, designing

evidence-based interventions, and evaluating practice outcomes. This DNP project allows me to fulfill my role within nursing leadership.

Role of the Project Team

Leaders at the project site has formed a group of NPs and registered nurses, all with a background in cardiology and treating patients with AMIs. The team was led by a DNP-prepared NP who has extensive knowledge in translating research to bedside practice and organizational policy. The project team implemented a 30-day transition of care program to decrease hospital readmission after AMI. I worked closely with the Director of Quality Assurance at the project site; he provided me with de-identified pre- and post-initiative data.

The project site's AMI program expanded from a pre-existing transition of care program. The previous program consisted of a non-licensed medical assistant telephone patients who have undergone cardiac catheterization, regardless of cause (i.e., STEMI, NSTEMI, abnormal stress test, pre-op clearance), within 1 week of procedure. The phone call was scripted. The main objective of the calls was to assess whether prescriptions were received and follow up appointment made; any further questions were deferred to the primary cardiologist. The AMI program followed patients who have a discharge diagnosis of MI (i.e., AMI, STEMI, NSTEMI); it included a telephone call by a nurse or NP 3 to 5 days post discharge, again at 14 days post discharge, and lastly at 30 days post discharge. Calls reinforced discharge instructions, including wound care, medication adherence, lifestyle modifications, and appropriate follow up with medical professionals.

Summary

Policymakers and clinicians have sought to reduce hospital readmissions as a method to improve both quality and value. These efforts are motivated by evidence that more frequent AMI readmissions may be associated with poorer quality of care (Wasfy, et al., 2020). These readmissions can be a sign of inadequate discharge planning and poor care coordination between hospital and outpatient clinicians. An NP led AMI readmissions reduction program was initiated to identify gaps in practice and to improve patient outcomes. Providing effective communication, supporting continuity of care, and advocating for patient engagement and empowerment are potential methods to improve transition of care and improving patient outcomes.

Section 3: Collection and Analysis of Evidence

Introduction

Hospital readmissions have considerable impact on patients' quality of life, as well as on healthcare expenditures. It is associated with increased incidence of debility requiring long-term nursing care and death (Dodson et al., 2019). In this context, over the past decade, there has been considerable attention by payors and hospitals towards reducing readmissions after AMI. For this DNP project, I evaluated a comprehensive AMI transition of care program aimed at providing post-discharge resources with the goal of decreasing readmission rates. In the previous sections, I have reviewed the background and context of the need for an AMI readmissions reduction program. In this section, I review the project design and analysis of evidence.

Practice-Focused Question

The gap in nursing practice this QI project focused on is a 30-day transition of care program for patients discharged with a primary diagnosis of AMI. The practice-focused question this DNP QI project addressed is: Can a 30-day transition of care program decrease readmission rates for patients with a recent AMI compared to prior standard of care? De-identified data, provided by the project site, was analyzed to compare pre and post QI intervention readmission rates.

The purpose, practice focused question, and approach of this DNP QI project was to evaluate data on the effectiveness of a transition of care program on decreasing readmission rates in patient with a recent AMI are in alignment with the purpose for clinical practice change. The results of this project were presented with recommendations

to enroll patients with AMI in a transition of care program focusing on wound care, medication adherence, lifestyle modification, and post discharge follow up. This clinical practice change would benefit patients with a recent hospitalization for AMI and improve readmission rates in the same population.

The implications for practice not only include better transition to home after discharge, but also improved medication compliance, decreased missed follow-up appointments, and decreased readmissions that lead to better patient outcomes (Bath et al., 2019). Hospitals need to develop methods to provide a seamless transition from hospital to home to prevent adverse events for patients, including readmission. Delivering good healthcare should prioritize continuity of care from the acute stage to chronic disease management.

Sources of Evidence

The sources of evidence for this DNP QI project were derived from a literature review using Walden University Library, Google Scholar and Cochrane, ProQuest, CINAHL, and PubMed databases. This QI evaluation project was planned based on various professional experiences, learning resources from medical conferences and other QI evaluation projects from peer-reviewed journals and books, Centers for Disease Control and Prevention, CMS, and the U.S. Department of Health. The relevance and strength of the literature was analyzed by using the American Nurses Credentialing Center's level of evidence rating system (Peterson et al., 2014). The literature search terms for this project include *AMI, STEMI, NSTEMI, discharge, readmission, transition of care, and quality improvement*.

Readmission rates have been considered a hospital quality measure and have been shown to reflect dimensions of quality of patient care (Rains, 2020). Readmission may be a key indicator of ineffective care and can be utilized to improve the management of patients with cardiovascular disease (Kim et al, 2021). The relationship between readmissions, LOS, cost of care, and mortality have been previously studied. For instance, in-hospital mortality has been found to be higher for patients who are readmitted versus those who are not (Upadhyay et al., 2019). Other researchers argue that readmissions lead to an increased LOS and expenditure of more hospital resources (Bottle et al., 2015). But a recent study argues that low-cost hospitals that spend fewer resources had readmission rates that were only slightly higher or similar to the hospitals that are high cost or spend more resources (Knies et al., 2019).

The effect of managing cardiovascular disease is clearly visible, particularly in the context of early mortality and readmission (Kim et al., 2021). The 2014 American College of Cardiology and American Heart Association guidelines on post discharge education plan of ST-elevation myocardial infarction patients include medication adherence, timely follow-up, dietary interventions, cardiac rehabilitation, compliance with intervention to prevention, and reassessment of arrhythmias and HF (Prejean et al., 2018). European Cardiology Society Guidelines recommend close follow-up for post PCI patients, but do not specify when to follow up (Prejean et al., 2018).

Readmission risk increases when patients are not adequately diagnosed or treated at their first admission, or when post discharge management is ineffective (Kim et al., 2021). To combat this, forecasting models have been used to identify those at high risk

for readmissions and allocate resource to higher risk populations (Smith et al., 2018, Zhang et al., 2020); others have focused on rapid outpatient follow up with cardiac rehabilitation to improve transition of care (Wasfy et al., 2020). Thus, the literature review gave insight to the background of AMI post discharge care. However, we do not know the role of the NP in transition of care from inpatient to the community for patients with a recent AMI.

Recommendations on mitigating hospital readmission after AMI can be made by comparing readmission rates before and after implementation of the AMI program. Appropriate transition of care is hypothesized to be a key factor in decreasing readmissions rates, collection, and analysis of de-identified data from the project site's QI project further aided in understanding elements to improve patient care.

Participants

The demographics of this QI project consisted of patients with a primary discharge diagnosis of AMI. A power analysis was conducted using G*Power 3.1 (Faul et al., 2007) to determine the sample size needed to determine treatment effect, if any. With a medium effect size and an alpha of 0.05, and a power of 0.8, a total sample size of 82 participants were needed to detect an effect (see Appendix).

Procedures

The project site has identified higher than average readmission rates in patient with a recent diagnosis of AMI. As part of their QI initiative, the project site has introduced a 30-day transition of care program aimed at decreasing readmission rates in this population. The project site has used the PDSA QI model to amend their pre-existing

2-week post-PCI transition of care program to elaborate on the current 30-day transition of care program for AMI patients. The PDSA framework is an effective method of supporting healthcare organizations to initiate change, reach quality goals, and structure improvement work (Connelly, 2021). The PDSA model can provide quick feedback of unforeseen operational gaps, and seamlessly incorporate alterations.

IRB approval was requested prior to collection of de-identified data. After IRB approval, I conducted the analysis process for my DNP project, evaluating the project site's QI program, using IBM Statistical Package for Social Sciences (SPSS), Version 25. The data for this study were imported into the SPSS software, which was used to maintain, manage, and analyze the data.

Protection

To ensure the ethical protection of participants, I obtained formal permission from the project site to use their archival data using the letter example from the Walden University's DNP QI Project Manual. I obtained IRB approval from Walden University prior to collecting the data from the project site. After IRB approval was obtained, I began evaluating the archival data set collected by the QI project team comparing readmission rates pre and post intervention. The de-identified archival data was provided to me by the QI director; the data were from the hospital's database called Tableau. Data included monthly AMI readmission rates for the 3 months prior to the QI project implementation and 3 months post-implementation.

Analysis and Synthesis

For this DNP QI project, I evaluated an existing QI project to decrease post-AMI readmissions. The aim of this QI project was to evaluate effectiveness of de-identified data of patients with a discharge diagnosis of AMI provided to me by the QI coordinator at project site. The archival patient data was from 3 months pre and 3 months post QI intervention. SPSS was used to perform a two-sample t-test to look for a statistically significant change in readmission rates in patients with a discharge diagnosis of AMI pre- and post-intervention.

The sample size of 84 included all discharged with a primary diagnosis of AMI from 3 months pre and 3 months post interventions. After analysis of the project site's de-identified data, a control chart was used to present the findings. The control chart illustrated monthly readmission rates for 3 months prior to and 3 months after the intervention of the AMI transition of care program. Hospital readmissions are publicly reported, thus ensuring the integrity of the evidence described.

Prior to implementing this data analysis, written permission was obtained from the project site and QI coordinator to use their data. Patient privacy was ensured by de-identifying data collect. IRB approval from Walden University was also needed prior to collecting the data from the project site. Data included monthly AMI readmission rates for the 3 months prior to the QI project implementation and 3 months post-implementation.

Summary

Health care organizations are faced with problem of unplanned and often avoidable readmissions. Ensuring a safe transition home is necessity for post-AMI patients. However, the project site identified high readmission rates in this population; this translates to a gap in practice. Thus, the QI initiative was implemented to reduce 30-day readmissions of AMI patients. Successful reduction of unplanned readmissions can reduce complications and promote good patient outcomes of AMI patients. In this section, I discussed the DNP project data collection and analysis. Results of the data analysis, findings, implications of care outcomes, and recommendations will be addressed in the following section.

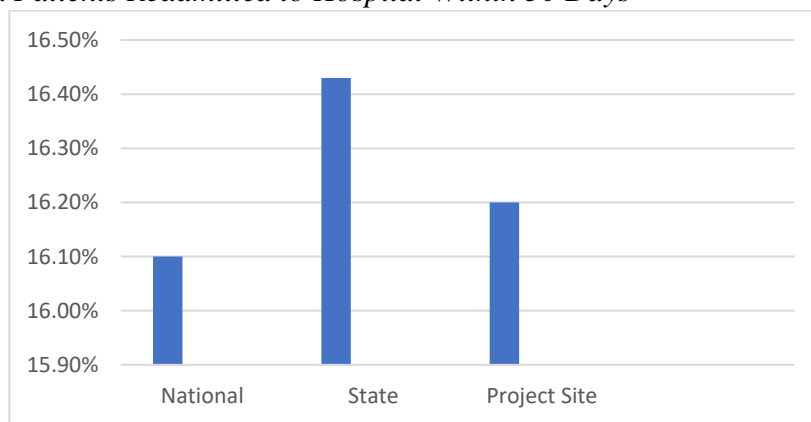
Section 4: Findings and Recommendations

Introduction

Readmission may be a key indicator of ineffective care and can be utilized to improve the management of patients with cardiovascular disease (Kim et al, 2021). Organizational leadership has identified higher than average readmission rates in patients with a recent diagnosis of AMI. The gap in nursing practice this DNP project addressed is the lack of follow up of care leading to increased rates of readmission in patients with a primary discharge diagnosis of AMI. According to the New York State Department of Health (n.d.), for the time period between July 1, 2016 and June 30, 2019, the project site had a 16.2% AMI readmission rate within 30 days of discharge, as compared to the nationwide average of 16.1% (see Table 1).

Table 1

Heart Attack Patients Readmitted to Hospital Within 30 Days



Note. Adapted from https://profiles.health.ny.gov/measures/all_state/1008. Copyright n.d. by the New York State Department of Health.

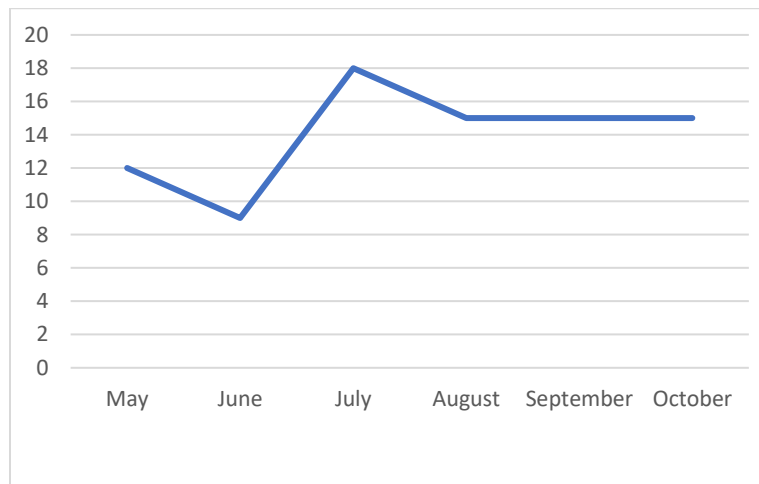
In this DNP project, I evaluated whether a 30-day transition of care program decreased readmission rates for patients with a recent AMI compared to prior standard of care (see Table 4). An extensive literature review was completed prior to collecting de-identified data from the project site. Statistical analysis using SPSS was completed based on the gathered data and is followed by recommendations on improving the project sites AMI program.

Findings and Implications

The 30-day AMI transition of care program was implemented in August 2020. In SPSS, independent samples t-test was used to analyze collected data (see Table 4). When comparing the data from 3 months pre-intervention to the 3 months post-interventions, no significant difference was seen. There was a total of 84 AMI readmission from May to October 2020 (see Table 2). There was a sizeable variability during the 3 months prior to the start of the AMI transition of care program, with 12, nine and 18 readmissions during the months of May, June, and July, respectively. The 3 months immediately following the implantation of the AMI transition of care program revealed a constant 15 readmission for each month, August, September, and October. Demographic data, such as age, race, and gender, were not analyzed for this project. All patient information except for discharge diagnosis was de-identified prior to access to data. As seen in Table 2, only the readmission rates were analyzed for this DNP project.

Table 2

Total AMI Readmissions During Study Period of May 1, 2020 Through October 31, 2020



On average, there were more readmission post-intervention than pre-intervention.

Table 3 shows the calculated average of thirteen readmissions 3 months prior to the implementation of the QI project, versus fifteen readmissions for the 3 months after the implementation of the QI project. Table 4 represents the results of the independent samples t-test. I began this DNP project with the hypothesis that the AMI transition of care program would decrease readmissions rates in patients with a recent AMI. However, as the p-value was greater than 0.05 (see Table 4), the AMI transition of care program did not decrease readmissions rates in patients with a recent AMI. Data analysis did not support the hypothesis; therefore, the null was accepted. This can be interpreted as the AMI transition of care program having no effect on the readmission rates in patient with a recent AMI. However, the initial results of the AMI program may have been limited by current coronavirus pandemic.

Table 3*Mean and Standard Deviation Rates Pre- and Post-Implementation*

	Mean	Standard deviation
May 2020 – July 2020	13	4.52
August 2020- October 2020	15	0.00

Table 4*Independent Samples t-test*

		t	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
	Equal variances assumed	-.756	4	.492	-2.00000	2.64575	-9.34578	5.34578
	Equal variances not assumed	-.756	2.000	.529	-2.00000	2.64575	-13.38375	9.38375

The coronavirus pandemic of 2020 has undoubtedly resulted in serious consequences both directly and indirectly. The fear of this disease, particularly in its early months, has also led to consequences that many did not expect (Livorsi-Moore et al., 2020). While people appropriately avoided social interactions and other leisure activities, many also avoided what typically would be considered essential medical care for acute conditions (Ahmed et al., 2020), which could explain lower readmission rates prior to the QI intervention. Patients with urgent health concerns avoided appropriate and necessary

care during the early weeks of the coronavirus pandemic. Despite organizational efforts to make patients and employees safe and feel safe, patients still often became convinced that a trip to the emergency room would put them at risk and should be avoided, resulting in delayed care (Zintsmaster & Myers, 2021). While many departments spent time overwhelmed with COVID-19 patients, the typical emergency cases diminished in volume. As a result, many EDs saw dramatic declines in overall patient volumes. While non-COVID-19 emergency visits were diminished, patients who did present to the ED did so with greater disease severity (Zintsmaster & Myers, 2021). Despite a decline in the total number of hospitalizations for acute coronary syndromes in the early months of the COVID-19 pandemic, the incidence of mechanical complications has risen (Ahmed et al., 2020). According to Bakhshi and colleagues (2021), this is most likely due to delay in revascularization, which is an established risk factor for development of mechanical complications following AMI.

Recommendations

Despite the negative preliminary finding of the QI project, the organization was satisfied with the anecdotal feedback provided by patients. During follow up clinic appointments, patient shared they felt discharge teaching was reinforced during post discharge calls, and weekly calls created a need for self-accountability in managing medications and much needed lifestyle modifications, including but not limited to smoking cessation and exercise. Weekly calls from an AMI program team member provided time to inquire about community resources to aide in successful lifestyle changes. The organization further felt longevity of community trust and building a

positive reputation would outweigh the initial financial losses (P. Melarcode-Krishnamoorthy, personal communication, December 15, 2020). It was also shared during one of cardiology leadership meeting, quarterly revenue had increased compared to last year. This was attributed to various initiatives the cardiology service line has implemented, including the transition of care program (P. Melarcode-Krishnamoorthy, personal communication, January 19, 2021).

Contribution of the Doctoral Project Team

The AMI program team was an imperative part of this DNP project. Organizational leadership formed a group of three NPs and two registered nurses, all with a background in cardiology and treating patients with AMIs. The team was led by an DNP-prepared NP with extensive knowledge in translating research to bedside practice and organizational policy. The project team implemented a 30-day transition of care program to decrease hospital readmission after AMI. The transition of care team slowly evolved into the AMI program team; while the groups primary focus remains outpatient transition of care, they now have the additional role of assessing ED patients for possible readmission versus rapid outpatient follow up in a cardiology clinic. This practice has been incorporated into the ED triage policy.

The team has also focused on AMI documentation. Accurate documentation of the nature of a patient's clinical course during hospitalization has been essential for patient care since the advent of the modern hospital. To date, Diagnosis-Related Groups remain the gold standard for health care systems-level risk-adjusted outcomes data and remain essential to health care purchasing negotiation and institutional prestige in metrics

such as the Joint Commission on Accreditation of Healthcare Organizations (Morrison et al., 2018). With an ever-increasing emphasis on pay for performance and value-based purchasing within the US health care system, there is a pressing need for institutions to accurately capture both the complexity and acuity of the patients they care for.

Strengths and Limitations of the Project

There is growing consensus regarding the need for improved transition of care interventions to reduce preventable readmissions. Coordination of care transitions between inpatient, outpatient and home for patients can be complex (Pugh et al., 2021). The most effective processes to mitigate readmission includes interventions such as patient education, medication reconciliation, discharge planning, and post-discharge phone calls (Pugh et al., 2021; Upadhyay et al., 2019; Wasfy et al., 2020). For the AMI transition of care program, organizational leadership attempted to blend these prior recommendations to decrease readmission rates post-AMI. I only evaluated readmission rates pre- and post-intervention for a short period of time which resulted in a small sample size of 84 total readmissions and data points, a longer analysis period may result in improvement of declining readmissions rates over time. I also evaluated the data from 3 months pre-interventions and 3 months post-intervention. However, had I compared the results from 3 months post-interventions to the same time period the year prior, results also maybe have been different.

Despite these limitations, organizational leadership remains supportive of finding innovative methods to deter readmissions in patients post-AMI. However, their dedication to remain an active participant in the post discharge process remains

tantamount, as such the organization has decided to prolong the 30-day transition of care program for further review.

Section 5: Dissemination Plan

As the QI project site was in a large academic facility, this allowed for the analysis and recommendations of the QI project to be shared within the various levels of nursing within the project site as well as health-systems wide. When collaborative research is completed, dissemination can occur through a targeted approach to expand the science and improve practice (Ashcraft et al., 20201). Nurses have the knowledge and skills to engage in translational science, and it is incumbent to use the knowledge and skills in collaboration with research discovery and using these discoveries in practice. The results from the QI project showed there was no improvement in readmission rates after implementation of a 30-day transition of care program for patients after AMI. However, given the limited data set the value of the findings further research is indicated.

First, the findings were relayed to the units most directly involved and effected by AMI readmissions (i.e., cardiology units). A brief presentation reviewing the gap in practice, QI project, conclusions and recommendations was reviewed daily for 1 to 2 weeks during morning huddle meanings. The AMI transition of care program was introduced to patients along with their discharge instructions. As with many inpatient settings, this organization utilizes a flex shift nursing scheduling consisting of eleven and a half hour shifts, meaning full-time nurses work three shift a week. Holding daily presentations captured more nurses of this project and its findings. The nursing department hosts annual poster presentations to highlight various research and QI projects led by nurses; this will be scheduled in May, during National Nurses Week. A poster presentation will present the QI project findings and recommendations to share

hospital-wide during this time. Additionally, the cardiology NPs in this organizations holds an annual NP symposium, focusing on current clinical topics, innovative research, professional development, and other topics related to advanced practice nursing. Findings from this DNP project will be shared for external dissemination in the form of a PowerPoint presentation.

Findings from this DNP project are also pertinent not only to nursing, but to all stakeholders within the organization. The same PowerPoint presentation was presented during the AMI program monthly meeting, and recommendations to improve the AMI program were shared with organizational leadership, including, nursing, medical and operational team members.

Analysis of Self

As a Practitioner

As I complete my terminal nursing degree, I have realized my purpose as a nurse has only begun. I began my nursing journey to help patient increase health literacy and empower themselves in selfcare. During this DNP journey, I have transformed into a nurse leader, not only advocating for and teaching patients, but also doing the same for the nurses at the point of care. Additionally, in having more interactions with organizational leadership, I hope to be able to make positive changes in healthcare delivery.

The expanding number of nurses prepared as DNPs provides great opportunity for various healthcare leaders to collaborate with DNPs to practice translational science (Ashcraft et al., 2021). Quality patient care is at the heart of nursing; however, I was

unsure how to best improve the quality of care in a given situation. The DNP Essentials outlines eight foundational competencies that reconceptualized advanced nursing practice to address the increasingly complex needs of a modern healthcare system. One of the essentials includes applying organizational and systems leadership for QI. Leadership is at the foundation of safe, efficient, patient-centered care. This essential prepares DNP prepared leaders to further nursing science by evaluating, translating, and disseminating research into practice (AACN, 2006). Key skills of this essential include the development of clinical practice guidelines, designing evidence-based interventions, and evaluating practice outcomes. As a member of a collaborative team and a DNP-prepared nurse, I now know how to implement interventions in practice through evidence-based QI initiatives.

As a Scholar

As I pursued my academics, I have grown as a scholar. The DNP education digs deeper into the science of nursing. While various theoretical models and best practice policies have been ingrained in me since my baccalaureate education, the true utilization of theory and research behind best practice policies has only been learned through my DNP academic endeavors.

Summary

It is incumbent on healthcare providers to evaluate effective strategies to mitigate readmissions after AMI. This DNP project focused on evaluating a new 30-day transition of care AMI program, with the goal of preventing readmissions in patients with a recent AMI. The QI project evaluation showed no significant change in readmission rates in the

3 months after implementation of the transition of care program. However, given the positive feedback from patients regarding the AMI program and cardiology department's support in innovative methods to reduce readmissions rates, my recommendation to prolong the transition of care program for further review has been approved.

As health care systems, hospitals and accountable care organizations have moved towards implementation of transitional care processes to reduce readmissions. Less is known about what specific processes are being implemented or what combinations of processes are most effective in practice (Pugh et al., 2021). Hospital readmissions are considered a result of poor healthcare quality, making it imperative to invest in creative approaches to deter hospital readmissions.

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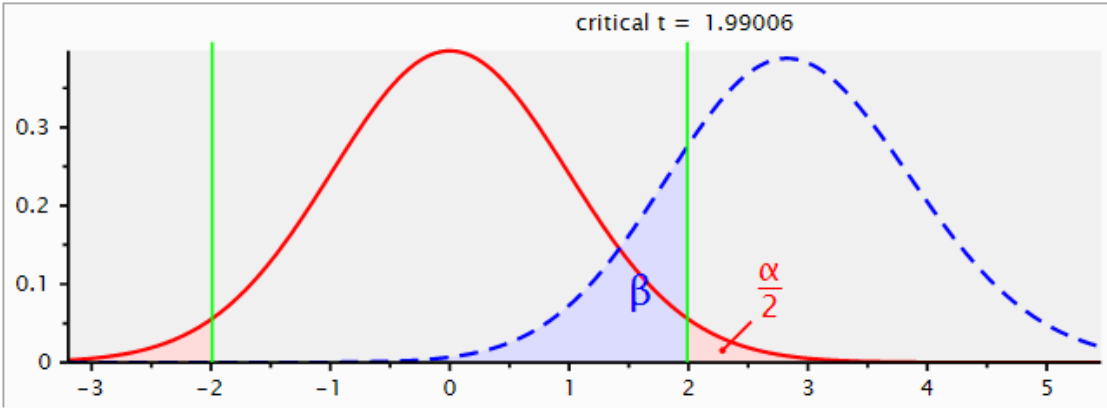
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Appendix: Power Analysis

G*Power 3.1.9.7

File Edit View Tests Calculator Help

Central and noncentral distributions Protocol of power analyses



critical t = 1.99006

Test family: t tests

Statistical test: Correlation: Point biserial model

Type of power analysis: A priori: Compute required sample size - given α , power, and effect size

Input Parameters

Determine => Tail(s): Two

Effect size $|\rho|$: 0.3

α err prob: 0.05

Power ($1 - \beta$ err prob): 0.8

Output Parameters

Noncentrality parameter δ : 2.8477869

Critical t: 1.9900634

Df: 80

Total sample size: 82

Actual power: 0.8033045

X-Y plot for a range of values

Calculate