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Lessons Learned from the Quality Improvement Process in a Community Based Hospital: The Dissection of Implementation Failure of Use of the PRISM Mortality Risk Tool and Standardization of Case Management to Reduce Readmissions in High Risk Patients

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Abstract

Hospital readmission, particularly within 30 days of discharge, is a wicked problem. Effective case management is an imperative component of high quality healthcare for the successful transition of patients across acute and post-acute settings. Patients with complex care needs endure an increased risk for negative outcomes, mortality, and hospital readmission. A small body of evidence suggests that early, targeted interventions aimed at high risk patients can mitigate complications and poor transitions. Patient complexity is an important consideration when establishing a comprehensive care management plan. Risk prediction tools are valuable for ensuring that high risk patients receive appropriate resource allocation. Case management processes must promote identification of patients with the most complex needs for the timely delivery of services that are nurse-coordinated, collaborative, and patient-centered.

The purpose of this scholarly project was to collaborate with the Case Management and Clinical Quality Management teams at an urban community-based hospital (CBH) to establish a standardized case management protocol for patients determined to be at high risk for mortality and readmission. Using the scores derived from a 30-day mortality risk prediction tool, PRISM, the project plan was to prioritize patients for case management services. The goal of this project was to augment current case management services to ensure that PRISM 1, 2, and 3 patients concurrently receive a standardized bundle of care and person-centered transition planning, beginning at the onset of the inpatient stay.

Keywords: case management, transitions of care, hospital readmission, and 30-day readmission

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Executive Summary

Hospital readmissions are very costly to both patients and health systems, and pose great risks to patients in terms of healthcare-associated complications, infections, and death (Steiner, 2015). Currently, the cost to Medicare for all-cause readmissions exceeds $26 billion annually. In fact, approximately $17 billion of these expenditures are related to readmissions that are considered avoidable (AHRQ, 2017a). Although the prevalence of readmission is frequently associated with individual patients' demographic, social, physical and physiologic factors, system-level risk factors resulting from organizational processes have a profound influence on readmission. System level influences include adequacy of case management, transition planning, patient and family education, and post-discharge follow-up; communication among healthcare providers; and handoffs and continuity of care between the acute and post-acute settings (Kirkham, Clark, Paynter, Lewis, & Duncan, 2014). Thus, the transitional needs of complex patients is an important consideration in the delivery of healthcare and transitions aimed at mitigating the risk for readmission and negative outcomes.

The identification of patients at high risk for complications, readmission, and death is crucial for providing effective care throughout the hospital stay. Risk prediction tools that isolate patient characteristics associated with mortality and readmission are valuable for allocating the appropriate resources to high risk patients (Kansagara et al., 2011). Using a risk prediction tool, case management processes can be initiated at the time of admission to effectively manage care for patients with the most complex needs. PRISM is a prospective risk prediction tool that measures the 30-day mortality for adult medical patients admitted through the Emergency Department. Use of the PRISM tool can stratify the small percentage of patients with the greatest risk for death and readmission (Trinity Health, 2014).

The delivery of targeted care bundles to high risk patients is an innovative strategy intended to reduce poor outcomes during hospitalization and after discharge. Evidence suggests that a targeted

care bundle can decrease the number of ED visits and 30-day readmissions (Koehler et al., 2009). Case management is a component of high quality care and is essential for the reduction of hospital readmissions. It is recommended that the case management process includes use of the PRISM Mortality Risk Prediction Tool score to allocate resources towards PRISM 1, 2, and 3 patients. It is further recommended that a standardized care bundle is implemented to target these high risk patients.

Introduction and Background

Hospital readmission within 30 days of discharge is a wicked problem. Readmissions are costly and place patients at an increased risk for healthcare-associated complications, infections, and death (Steiner, 2015). According to the Agency for Healthcare Research and Quality (AHRQ) (2017a), the cost to Medicare for all-cause readmissions exceeds $26 billion annually. More alarming is the fact that approximately $17 billion of these expenditures are related to readmissions that are considered avoidable (AHRQ, 2017a).

Readmissions

Readmission is defined as re-hospitalization within thirty days of the index stay (the first hospitalization). Older adults sixty-five years of age and older have the highest rates of readmission and are twice as likely to visit the Emergency Department (ED) within 30 days of discharge (Hines, Barrett, Jiang, & Steiner, 2014). The prevalence of return is associated with demographic, social, physical and physiologic, and system-level risk factors. These factors include socioeconomic status, race and ethnicity, social support, and the availability of resources in the community (Robinson, Howie-Esquivel, & Vlahov, 2012).

System level factors have a profound effect on readmission. System level influences are related to the safety and quality of inpatient care: adequacy of case management, transition planning, patient and family education, and post-discharge follow-up; communication among healthcare providers; and handoffs and continuity of care between the acute and post-acute settings (Kirkham, Clark, Paynter, Lewis, & Duncan, 2014). In addition, physical and physiological conditions play a role in readmission. These include the presence of one or more chronic condition, comorbidities, the duration and severity of recent illness, the aging process, and pharmacokinetics (Robinson et al., 2012).

Data reported by the AHRQ indicate that diagnoses can be a predictor of readmission (Hines et al., 2014). Four conditions, acute myocardial infarction, congestive heart failure (CHF), chronic

obstructive pulmonary disease (COPD), and pneumonia are considered "high-volume" triggers for readmission. In 2013, over 500,000 patients returned to the hospital as a result of one or more of these four conditions, at an aggregate cost of $7 billion; in fact, the cost to Medicare was 74% of these aggregate costs (Fingar & Washington, 2015). Thus, patient complexity is an important consideration in the delivery of safe, high-quality care and transitions aimed at decreasing the risk for readmission and negative outcomes.

The Aging Population and Patient Complexity

Aging population. The United States (U.S.) is a rapidly aging country. There are now unprecedented numbers of older adults, as a result of the aging Baby Boomer population and a steady rise in the average life span over the past several decades. The Centers for Disease Control and Prevention (CDC) (2013) predicts that by the year 2030, adults sixty-five years of age and older will comprise nearly 20% of the U.S. population. It is projected that by 2050, the number of "oldest old" over 85 will triple to 18.2 million (United States Census Bureau, 2012).

In addition, the older adult population is becoming more ethnically and racially diverse than in previous decades (Orthoff, Velkhoff, & Hogan, 2014). At the present time, approximately 66% of U.S. healthcare expenditures result from the specific needs of older adults with multiple chronic conditions (CDC, 2013). In addition, each year nearly 18% of Medicare patients are readmitted to the hospital within 30 days of discharge, which accounts for $15 billion in expenditures annually (Fingar & Washington, 2015).

Complexity of care. The proportion of individuals of all ages with multiple chronic conditions has risen sharply in the U.S. over the past several years (Chatterjee, Kubendran, King, & DeVol, 2014). The CDC (2016) reports that at least one half of U.S. adults live with one chronic condition, and 25% of adults experience at least two or more chronic diseases. It is predicted that by the year 2030, the number of Americans with chronic disease will increase by over 37%, equivalent to nearly 46 million persons (Chatterjee et al., 2014). In a 2013 survey conducted of physician assistants, over

60% of the respondents admitted to seeing patients with an average of three or more chronic conditions. These conditions include obesity, hypertension, dyslipidemia, diabetes, coronary artery disease, sleep apnea, and kidney disease (Lane, 2015). Individuals with multiple disease diagnoses are complex, and experience a higher rate of hospital admission and readmission (Chatterjee et al., 2014).

Individuals with chronic disease and multiple comorbidities experience higher rates of complications and longer hospital lengths of stay (LOS). These persons are at an increased risk for ED visits and readmission following discharge (Chatterjee et al., 2014). Studies show that the small percentage of patients with the most complex conditions and care needs require greater levels of care and utilize a disproportionate share of healthcare resources. Approximately 20% of U.S. healthcare expenditures are consumed by one percent of the population. This equates to over $275 billion in healthcare spending (National Institute for Healthcare Management [NIHCM], 2012). Healthcare that is safe, efficient, and effective is critical to improve outcomes for these high risk patients.

The aging population and the rise in the incidence of chronic disease present a challenge for healthcare systems. These patients require higher levels of complex care and are at increased risk for negative outcomes, readmission, and death. In addition to the high cost of delivery of care to these patients, organizations are subject to financial consequences related to increased rates of readmission.

Federal Healthcare Policy

Considered a negative outcome of hospitalization, readmission rates are used by federal agencies and accreditation organizations as an indicator of the quality of care provided during the hospital stay (Centers for Medicare and Medicaid [CMS], 2017a). Federal policy continues to change rapidly with an overarching aim to improve the safety and quality of care, as well as lower costs. Several recently adopted federal programs are an attempt to improve outcomes by means of penalties and incentives. The Patient Protection and Affordable Care Act of 2010 (ACA) set forth several new requirements.

Hospital Readmissions Reduction Program. The ACA established the Hospital Readmission Reduction Program (HRRP), which became effective on October 1, 2012. This programs reduces payments to hospitals that exceed readmission rates set by CMS (CMS, 2016). Under the HRRP, the CMS (2014) measures 30-day readmission rates for Medicare beneficiaries enrolled in traditional Fee-for-Service Medicare for the continuous twelve month period prior to the index hospital stay (Hospital Compare, 2013). The 30-day post-discharge period is used, as beyond thirty days factors beyond hospitals' control can impact readmission.

For Fiscal Year 2017 (FY 2017), hospitals have the potential to lose up to three percent of regular Medicare reimbursements. Currently, the HRRP is applicable to approximately 3,330 acute care hospitals and 430 long-term care hospitals (The Advisory Board Company, 2016). According to the August 2016 CMS release, it is anticipated that approximately 2,597 hospitals will withstand penalties in 2017 (CMS, 2016). Although the number of hospitals penalized is expected to decrease from 2,665 in FY 2016, reimbursements withheld in FY 2017 will be at an all-time high. During FY 2017, CMS projects a withholding of $528 million in payments, an increase of $108 million from FY 2016 (Rau, 2016).

Currently, all hospitals are subject to the same CMS readmission standards (CMS, 2016; Rau, 2016; The Advisory Board Company, 2016). Vulnerable patients, with fewer community resources and support, are inherently at greater risk for readmission once discharged into the community. Hospitals that offer services to underprivileged, underinsured, and underserved populations face enormous barriers to making improvements that positively impact readmission rates (Rau, 2016). Hospitals must find innovative ways to improve care management and transitions to mitigate the negative consequences resulting from readmissions.

CMS consumer reporting programs. CMS administers two quality initiative programs: Hospital Compare and the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS). These programs publicly display CMS hospital performance data based upon 30-day

mortality and readmission rates, and many other outcome measures (CMS, 2017a; HCAHPS, 2017). Using quality data submitted by hospitals to the Hospital Inpatient Quality Reporting Program, an overall rating is generated. Mortality, safety, and readmission are determinants in hospitals' overall ratings (CMS, 2017a). The HCAHPS survey is a national, standardized, publicly-reported survey that measures patients' perspectives about the quality of their hospital care (HCAHPS, 2017).

Through Hospital Compare and HCAHPS, CMS promotes transparency related to hospitals' performance. Outcome measures that are made publicly available to consumers serve as incentives for hospitals to improve the quality and safety of care. These programs heighten hospital accountability by encouraging strategies that improve outcomes, such as mortality, safety, and readmission, and enhance the patient experience.

The Innovation Center. Under the current Medicare payment structure, separate payments are made to providers and organizations for services delivered for a single encounter, illness, or course of treatment. Typically, this has led to fragmentation and lack of care coordination among healthcare providers (CMS, 2017b). As part of the ACA, section 1115A of the Social Security Act, The Innovation Center was established. The Innovation Center is a division of CMS, and functions to test models (relevant to Medicare and Medicaid programs) that improve care, lower costs, and promote payment systems that support patient-centered practices (CMS, 2017c).

Healthcare policy written into the ACA is intentionally devised to increase the accountability and improve the performance of hospitals, practitioners, and service providers. Programs such as the HRRP and The Innovation Center are aimed at enhancing coordination of care, efficiency in care delivery practices, and improvements in transitions of care across settings. Innovative practice change focused on patient-centered, safe, high-quality care is a high priority for healthcare organizations, stakeholders, and policymakers. The overarching goal of innovation must be to create highly coordinated care involving collaboration among a variety of providers to increase positive outcomes, decrease mortality, and reduce readmissions.

Effective management of patients across settings

Effective management of patients during the acute hospital stay and post-acute settings is an imperative component of high quality healthcare. Patients with complex care needs have an even greater need for comprehensive care management, as these individuals are at an increased risk for complications, mortality, and hospital readmission (Jencks, Williams, & Coleman, 2009). A small body of evidence suggests that early interventions targeted at high risk patients can mitigate complications, poor transitions, and readmission (Koehler et al., 2009). Thus, patient complexity is an important consideration when establishing a comprehensive care management plan.

The identification of patients at high risk for complications, readmission, and death is crucial in providing effective care throughout the hospital stay and following discharge. Risk prediction tools, such as those that isolate patient characteristics associated with mortality and readmission, are valuable for allocating the appropriate resources to high risk patients (Kansagara et al., 2011). Case management processes must be initiated to quickly begin coordination of care for patients with the most complex needs. This care coordination must incorporate strategies that are nurse-coordinated, collaborative, patient-centered, and plan for continued interventions into post-hospital settings (Koehler et al., 2009).

It is evident from the 2,597 hospitals anticipated to receive readmission penalties under the HRRP in FY 2017 that barriers exist to the successful transition of patients from the acute care setting. To improve post-discharge outcomes and reduce readmissions, it is vital that hospitals establish rigorous, person-centered case management protocols designed to effectively transition patients (Li, Young, & Williams, 2014). An increasingly aged population and the significant rise in the prevalence of chronic disease mandate innovative new ways to produce positive outcomes and improve cost efficiency.

Complex patients must be rapidly recognized to receive the most appropriate services. Case management should begin at the onset of admission and clearly delineate interventions that allow for

communication of vital patient information and critical risk factors among the interprofessional team. Early establishment of a highly coordinated plan of care and a transition plan that place the patient and family at the center of processes has been shown to be effective in reducing readmission (Li et al., 2014). In addition, high risk patients who may benefit from hospice services, palliative care, and end-of-life care should receive timely and appropriate referrals (Cowen, Strawderman, Czenwinski, Smith, & Halasyamani, 2012). To mitigate negative outcomes, such as readmission, case management services must be timely and comprehensive.

Gap in Practice at a Community-Based Hospital

A gap has been identified in the provision of timely, comprehensive case management services to patients at high-risk for 30-day readmission within a community-based hospital (CBH) in West Michigan. Evidence has shown that readmissions may be decreased when case management is provided early in the hospital stay (Koehler et al., 2009; Li et al., 2014). Yet, on units in the CBH with the greatest numbers of high risk patients (the acuity adaptable gerontology medical unit and adult intensive care unit), case management is not consistently initiated early in the hospital admission. There is a lack of standard protocol across these units in regards to caseload prioritization. Furthermore, no bundle of interventions exists to standardize case management services delivered to high risk patients (M. Ziomkowski, personal observation, May 18, 2017, June 15, 2017, June 22, 2017).

Proposed Evidence-Based Intervention

In December, 2016, the CBH adopted a new protocol for the identification of patients at high risk for 30-day mortality called PRISM. The aim was for all adult medical patients (age 18 years and older) presenting to the ED to be given a mortality risk score using the PRISM tool. Using a specific set of data collected from the electronic health record and physician entry, patients were scored between one and five. A PRISM score of one is considered to be the greatest risk for 30-day mortality and readmission, while patients with a score of five are the lowest risk. Based on CBH readmission

data, it was determined by the Clinical Quality Management and Case Management teams that PRISM 1, 2, and 3 patients have the most need for early and robust case management (Manager of Case Management, Performance Improvement Coordinator, & Director of Quality, personal communication, May 17, 2017).

During the organizational assessment, it was discovered that the PRISM score was not a factor in the daily determination of caseload, and case managers did not consider this score when establishing daily workload (M. Ziomkowski, personal observation, May 18, 2017, June 15, 2017, June 22, 2017). This scholarly project involved collaboration with the Case Management and Clinical Quality Management teams in an attempt to establish a protocol for the case management of all patients with PRISM 1, 2, and 3 scores. In addition, it was anticipated that standardized care bundles would be established for high-risk patients. The overarching goal of this project was in alignment with the CBH's FY 2018 strategic plan for the reduction of 30-day readmissions.

Problem Statement

Healthcare organizations as complex, decentralized systems are predisposed to inefficient, unorganized processes that often result in unintended gaps in care (Institute of Medicine, 2001). Negative consequences associated with these gaps place hospitals at risk for financial loss, poor quality and safety outcomes, and damage to their reputation within the community. CBH, as a complex system, is no exception. The gap in standardized, robust case management protocols at CBH leaves high risk patients vulnerable to 30-day readmission. The question became, "In adult medical patients admitted to the acute care hospital through the ED, how does application of a mortality risk prediction tool and standardized care protocols for patients scored as PRISM 1, 2, and 3 impact readmission within 30 days of discharge?"

The issue of 30-day readmission rates was addressed at CBH through use of the PRISM mortality risk prediction tool. As the risk for 30-day mortality may also be indicative of the risk for 30-day readmission, this project sought to utilize the PRISM tool to allocate case management

resources towards patients with the highest risk and the greatest needs (those having scores of 1, 2, and 3). A model for case management services was proposed that included use of the PRISM score to stratify patients to determine caseload and daily workflow. Standardized bundles of care were suggested, with the objective for case managers to implement consistent, standardized, and robust transitional care. It was anticipated that this innovative approach to case management would decrease the rates of readmission for patients having PRISM 1, 2, and 3 scores.

Evidence-Based Initiative

A discharge plan that begins with recognition of patients at high risk for negative outcomes may be effective in the reduction of readmissions. High risk patients have a greater need for the appropriate allocation of case management resources. Risk prediction tools have been shown to be effective for clinical stratification at the onset of hospital admission and are important in clinical decision making (Kansagara et al., 2011). These tools distinguish patients by focusing on variables associated with risk.

Mortality Risk Prediction Tools

Several models have been developed that predict the 30-day mortality risk of medical patients (Ha et al., 2017). Research suggests that the risk for 30-day mortality may correlate with increased hospital length of stay (LOS), unexpected discharge to a skilled nursing facility, and 30-day hospital readmission (Cowen et al., 2012). Therefore, detection of this risk upon admission is a significant strategy for avoiding readmission.

For patients requiring complex levels of care who are admitted through the ED, risk stratification is particularly useful (Kansagara et al., 2011). Research conducted by Tremblay, Arnsten, and Southern (2016) revealed that a simple 30-day mortality risk tool can be a powerful predictive model. Using only three predictive variables (Charlson Comorbidity Score, Laboratory-Based Acute Physiology Score, and age), this model tested by Tremblay et al. (2016) demonstrated statistical significance in predicting 30-day mortality.

Cowen et al. (2012) developed a tool using clinical laboratory values, past medical history, and admitting diagnoses to predict 30-day mortality. This tool was found to be an indicator of mortality risk, and a strong predictor of in-hospital death, palliative care status, and 180-day mortality. Although only the relationship between mortality risk and 30-day readmission has not been investigated by current research, this tool can be operationalized to assist in the mitigation of rehospitalization (Cowen et al., 2012).

Targeted Care Bundles

The delivery of targeted care bundles to high risk patients is an innovative strategy intended to reduce poor outcomes during hospitalization and after discharge. In a study of high risk elderly patients, Koehler et al. (2009) found that a targeted care bundle decreased the number of ED visits and readmission at 30 days. These authors discovered an increased length of time between discharge and acute care reentry; however, this effect was no longer present at 60 days post-discharge. Targeted care bundles that have been tested include appropriate inpatient unit placement, direct ED nurse to unit nurse handoff, highly coordinated inpatient care, diagnoses-related education that embraces patient and family, post-discharge appointments scheduled for patients prior to discharge, and provider-to-provider and nurse-to-nurse handoffs between the hospital and discharge destination (Trinity Health, 2016).

What the Evidence Suggests

Case management protocols that are rigorous, individualized, and include specific and intentional care interventions can mitigate poor outcomes and decrease readmissions (Leppin et al., 2014; Li et al., 2014). There are several commonalties in the current body of evidence (Appendices A & B). Appendix A provides a summary of the evidence identified in the integrative review. Appendix B depicts an overview of Melnyk's Level of the Evidence, which was used as a guide for critical appraisal of the evidence.

Critical appraisal of current research revealed several themes. First, the registered nurse as coordinator of care was a strong theme throughout the literature. The nurse is essential in ensuring that

the plan of care is comprehensive and attainable (Jack et al., 2009; Jones et al., 2016; Verhaegh et al., 2014). With an understanding of the importance of a holistic approach to patient care, nurses are the logical choice as the coordinators of care.

The second commonality in the literature is the inclusion of the patient and family in planning, decision making, and education (Coleman, Parry, Chalmers, & Min, 2006; Jones et al., 2006; Vedel & Khanassov, 2015). The patient and family must be highly engaged and actively included in establishing and directing the plan. Placing the patient and family at the center of all processes ensures individualized care and uncovers specific needs, barriers, and facilitators to post-discharge success.

Third, the body of evidence suggests the use of multiple interventions. Vedel and Khanassov (2015) and Verhaegh et al. (2014) describe "high intensity" (combined) interventions as valuable in reducing readmissions and visits to the ED. In addition, bridging inpatient case management with post-discharge care is an effective strategy to mitigate readmissions. Collectively, the most common inpatient interventions described in the literature were patient education, medication reconciliation, pre-arranged follow up appointments, and disease-specific education and discharge instructions (Coleman et al., 2006; Englander, Michaels, Chan, & Kansagara, 2015; Jones et al., 2016; Koehler et al., 2009; Low et al., 2017; Vedel & Khanassov, 2015). Interventions that were tested, but less common, included pharmacist counseling, encouragement for providers to prescribe low-cost medications (Englander et al., 2015), daily collaborative care meetings (Low et al., 2017), and individualized care plan development (Jones et al., 2016; Vedel & Khanassov, 2015).

In summary, although only a small volume of current research has been conducted to study interventions aimed at reducing readmissions, the preponderance of this evidence supports the effectiveness of an intentional case management protocol. Complex patients require early identification, intervention, and management to reduce risk of death, poor outcomes, and readmission. Risk prediction tools that identify the potential for mortality and readmission can be used to stratify patients according to complex care needs. By identifying complex patients at the highest risk for

negative outcomes, early case management can be initiated that promotes care coordination and successful transitions among care settings. The most efficacious case management programs utilize nurses as care coordinators, position patients and families at the center of care, rely on the expert knowledge and skills of a diverse collaborative team, and utilize targeted care interventions throughout and after the hospital stay.

Conceptual Models

Theory bridges research with practice; it is a philosophical perspective of reality and provides the underpinnings for conceptualization of a phenomenon (Smith & Liehr, 2014). Middle range nursing theory offers guidance for everyday practice. The connection between concepts and propositions of middle range theory and nursing phenomena provides a roadmap for operationalizing change (Smith & Liehr, 2014). Patients with complex illness and changes in state of health experience a process of transition. This phenomenon can be more fully conceptualized through the lens of Meleis' Theory of Transitions.

Theoretical Model in Support of Project Implementation

Meleis' Theory of Transitions provides a link between nursing care and the transitions that occur as individuals experience illness and changes in health. This theory is grounded in the belief that nurses play a central role in providing care for individuals and families in transition (Meleis, Sawyer, Im, Messias, & Schumacher, 2000). As Im (2014) stated, "Nurses could facilitate successful transitions by providing information, support, and/or direct care, which subsequently help prevent disease, reduce health risks, enhance health/well-being, and facilitate rehabilitation of those in transitions" (p. 253). This is the fundamental role of the nurse case manager.

The Theory of Transitions model (Appendix C) endorses the nurse case manager as foundational to success of meeting patients' goals. This theory advocates for the nurse to respect the patient's ability and readiness to deal with changes, and calls for the nurse to provide "adequate and appropriate care for people in transitions" (Im, 2014, p. 259). The major concepts of this theory are: 1)

types of transitions, 2) patterns of transitions, 3) properties of transitions experiences, 4) transition conditions (facilitators and inhibitors), 5) patterns of responses (process and outcome indicators), and 6) nursing therapeutics (Im, 2011, 2014: Meleis et al., 2000). These concepts provide the tenets for implementation of change to the CBH's case management protocols.

Types and patterns of transitions. The type of transition central to case management is health and illness transition. Events such as the recovery process, hospital discharge, and diagnosis of chronic illness often lead to transition (Im, 2014). The Theory of Transitions suggests that patients may experience multiple transitions sequentially or simultaneously, and the overlap among these separate events increases the complexity of transition (Meleis et al., 2000). For example, an elderly patient with multiple comorbidities (diabetes, COPD, CHF, hypertension, and obesity) has recently suffered a stroke, and now requires transition to a new living environment (assisted living).

Properties of the transition experience. Meleis et al. (2000) explain the properties of the transition experience as awareness, engagement, change and difference, time span, and critical points and events. These properties are interrelated as a complex process (Meleis et al., 2000). A patient's perception, knowledge, and recognition of a transition experience influence the level of engagement and participation in the plan of care. Changes in an individual's identities, roles, relationships, abilities, and behaviors are an inherent aspect of transition. Differences in expectations, such as feeling unsatisfied, atypical, or dissimilar, may impact a patient's successful transition. Critical episodes (for example, diagnosis of illness) are consequential to transitions (Im, 2014). These properties of transition are important considerations for the case management nurse in delivery of appropriate interventions to meet patients' and families' specific needs.

Transition conditions. Transition conditions are circumstances that may facilitate or encumber a patient from achieving a successful transition. These conditions may be personal, societal, or community factors that act as facilitators or barriers to transition processes and outcomes (Im, 2014; Meleis et al., 2000). As a case manager, it is vital that the nurse become aware of conditions that

influence the transition process. Active involvement of the patient and family, as well as frequent opportunities for face-to-face communication during the inpatient stay will enhance discovery of conditions significant to transition.

Patterns of response: process and outcome indicators. Patterns of response are process and outcome indicators. Process indicators reveal an individual's capacity for health or vulnerability and risk. These indicators include feeling connected, interacting, being situated, and developing confidence and coping. Meleis et al. (2000) suggest that process indicators can be used by the nurse to assess, intervene, and facilitate effective transitions. Outcome indicators are used to determine the success of a transition (Meleis et al., 2000).

It was hoped that case management at CBH would be augmented using process indicators. Protocols to increase face-to-face interaction, improve communication, augment patient and family education, and facilitate the delivery of targeted care bundles have the potential to enhance the patient's capacity for coping, as well as decrease the risk for 30-day readmission. It was proposed that outcomes measures used as indicators of the effectiveness of case management process change would include 30-day readmission rates and the number of ED visits within 30 days of the index hospitalization.

Nursing therapeutics. Nursing therapeutics are defined by the Theory of Transitions model as assessment of readiness, preparation of transition, and role supplementation. These three actions require collaboration among the nurse case manager, patient/family, and other members of the interprofessional team to gain a comprehensive understanding of the patient's needs (Im, 2011, 2014; Meleis, 2000). Assessment for readiness and preparation for transition requires intentional interventions aimed at producing conditions and situations most conducive for successful transitions.

At CBH, the project plan was to incorporate a targeted care bundle aimed at high risk patients. The components of the care bundle included face-to-face visits with the patient and family, education

delivery to patient and family, Meds to Go dispensation at discharge, home health referral, scheduled post-discharge appointments, and transfer of patient records to the primary care and other providers.

The Theory of Transitions provided the ideal framework for change in case management processes at CBH. Transitions are complex and involve changes in an individual's identity, roles, relationships, and abilities. Transitions occur sequentially and simultaneously, and are shaped by the nature, conditions, and meanings of transition experiences. Nurses, as primary caregivers of patients and families, are vital in the processes for patients negotiating transitions. Successful transitions depend upon a therapeutic and effective relationship between the nurse case manager, patient, and family (Im, 2011, 2014; Meleis et al., 2000).

Implementation Framework for the Project

The success of a quality improvement initiative is enhanced when implementation is based on current evidence. An implementation framework can guide translation of evidence into meaningful outcomes (Damschroder et al., 2009). The Consolidated Framework for Implementation Research (CFIR) is a theoretical framework with practicality for quality improvement implementation across multiple contexts. Introduced in 2009, the CFIR is a comprehensive, standardized integration of 19 implementation science models, theories, and frameworks (Damschroder et al., 2009). The CFIR encompasses five major domains: intervention characteristics, outer setting, inner setting, characteristics of individuals, and process (Appendix D). Under these five domains, the CFIR is comprised of 26 constructs and 13 subconstructs, which can applied to the implementation of an innovation or change (Breimaier, Heckemann, Halfens, & Lohrmann, 2015; CFIR, 2016).

The CFIR is an effective framework for evaluating implementation progress, organizing data and findings, and interpreting outcomes. In regards to the quality improvement innovation at the CBH, the CFIR was previously applied to conduct a thorough organizational assessment. As such, the CFIR was utilized to predict the potential success of case management strategies, select strategies to augment facilitators and reduce barriers, and to promote the application of research evidence in new protocols

(Breimaier et al., 2015; CFIR, 2016; Damschroder et al., 2009). A specific advantage of using the CFIR was its extensive compilation of constructs under the five domains; domains and constructs appropriate to the milieu of CBH were applied. The domain and constructs most pertinent to the implementation of this innovation were operationalized (Damschroder et al., 2009). Specifically, Domain V (Process) and the constructs of planning, engaging, executing, and reflecting/evaluating were used to guide the implementation process at CBH.

Need and Feasibility Assessment of the Organization

The plan for implementation of the PRISM Mortality Risk Prediction Tool and a standardized case management protocol took place at the main campus of a Midwestern 344-bed CBH located. In May, 2017 an in-depth and comprehensive organizational assessment of the CBH was conducted, guided by the CFIR and a strengths, weaknesses, opportunities, and threats (SWOT) analysis (Appendix E). At CBH, a gap was identified in the provision of timely, standardized case management services to patients at high-risk for 30-day readmission.

As stated previously, on inpatient units with the greatest numbers of high risk patients (the acuity adaptable gerontology medical unit and acuity adaptable adult intensive care unit), case management was not consistently initiated early in the hospital admission. In addition, there a deficiency in standard protocol across these units in regards to caseload prioritization was identified. Furthermore, no standard protocol existed for care interventions in the management of high risk patients (M. Ziomkowski, personal observation, May 18, 2017, June 15, 2017, June 22, 2017).

Hospital readmissions are a substantial cause of negative outcomes for patients, as well as a burden for healthcare organizations. CBH was at risk for financial penalties and other undesirable effects associated with readmissions. However, it was identified that CBH had a large capacity for change. As part of one of the largest healthcare systems in the nation, this organization has significant capacity to leverage a wide array of resources for innovation.

The Quality Institute established at one of the CBH's sister hospitals offered a unique source of research support for the implementation of this practice improvement. The well-defined mission, core values, and guiding behaviors of the organization presented the potential for a culture of collaboration. The current FY 2018 strategic plan of CBH promoted receptivity to innovations and fostered champions for change. Finally, the True North measures associated with CBH's strategic plan aligned with PRISM constructs and aligned with factors to facilitate a favorable environment for sustainable change. CBH was well-positioned for implementation of PRISM scores for the prioritization of high risk patients and the development of case management protocols to reduce 30-day readmissions.

The potential for success of this project was fostered by formally appointed leaders charged with responsibility to implement PRISM. These leaders included the Medical Director of Quality, the Director of Professional Practice and Development, and the Performance Improvement Coordinator. Operationalization of PRISM scoring for patients admitted through the ED began in January, 2017; at the time this project ensued, approximately 85% of adult patients were receiving a PRISM score through the ED (PIC, personal communication, June 27, 2017). Success was further enhanced by the Performance Improvement Coordinator, who oversaw implementation of the PRISM tool in the ED and carried out education and training of key stakeholders.

Key stakeholders existed external and internal to CBH (Appendix F). Internal stakeholders included the Board of Trustees, executive leadership team, all members of clinical service lines, non-clinical employees, the Practice Partners providers, other medical staff, patients, families, and caregivers. External stakeholders were comprised of regulatory and governmental agencies, policymakers and legislators, collaborative and joint venture partners, vendors and contracted service providers, local and regional healthcare organizations and systems, and neighborhoods and communities. These stakeholders held various interests in the success of CBH.

Stakeholder interest presented several facilitators and barriers to change. Facilitators were as follows: 1) high engagement and commitment of the Performance Improvement Coordinator to this

project; 2) direct alignment with the organization-wide FY 2018 strategic plan, which augmented receptivity and readiness for change; 3) verbalization by some of the case managers of a desire to increase face-to-face time and person-centered care through improved efficiency; 4) PRISM scoring was already operational and had become an integral component of the ED-to-admission process; 5) the change process for this project could be incorporated into the present roles of stakeholders; 6) an existing PRISM framework for bundled care standards existed; and 7) there was strong support from the Quality Institute for guidance and data mining.

Barriers to this project identified during the organizational assessment included: 1) current case management workflow was encumbered by daily rounds, meetings, and processes requiring much time spent at the desk and engaged with the electronic health record; 2) reduced time availability for case managers to engage in face-to-face encounters with patients and families due to barrier #1; 3) the need for development of an efficient way for case managers to identify patients by PRISM score; 4) balancing standard care bundles with patient-specific case management strategies; and 5) the ever-present challenge of patient resistance to case management and transitional care services and recommendations.

In summary, the organizational assessment revealed a strong opportunity for this project. The overarching opportunity was the potential for improvement of the patient experience by increasing quality and safety, reduction of financial penalties and an increase in value-based revenues, and positively enhanced publicly reported data. This project provided an additional strategy for attainment of goals related to the FY 2018 strategic plan. Additionally, this project had the potential to streamline case management workload and workflow, and may have allowed case managers more time to be spent with patients and families, ultimately improving role satisfaction.

Project Plan

Purpose of Project with Objectives

Case management is a component of high quality care and is essential for the reduction in hospital readmissions. The purpose of this scholarly project was to collaborate with the CBH's Director of Professional Practice and Development and the Performance Improvement Coordinator to: 1) implement use of the PRISM Mortality Risk Prediction Tool score to allocate case management resources towards PRISM 1, 2, and 3 patients, and 2) develop and implement a standardized care bundle for the delivery of case management services to PRISM 1, 2, and 3 patients.

This intent of this project was to augment current case management practices and create alignment with the CBH's True North metrics of the strategic plan, specifically in regards to the reduction of 30-day readmissions. The implementation of this project had three primary objectives: 1) to reduce the number of patients readmitted to the CBH within 30 days of discharge, 2) to reduce the number of return visits to the ED within 30 days of discharge, and 3) to provide all patients admitted through the ED having a PRISM score of 1, 2, or 3 with standard and individualized case management services during the inpatient stay. Secondary objectives to be achieved incidental to the implementation of this project: 1) improved caseload management and workflow efficiency by using a standardized protocol and 2) increased case manager role satisfaction through more face-to-face time with patients and families.

Type of Project

This innovation was determined to be a quality improvement project based upon an evidence-based practice change. According to the Institute for Healthcare Improvement, quality improvement is crucial to meet the increasing demands for positive patient outcomes and to provide an excellent patient experience (Scoville & Little, 2014). There is a sense of urgency to manage outcomes, improve value, and control costs as indicated by policy reforms established by the federal government, payers, professional standards organizations, and advocacy groups (Scoville & Little, 2014). This

project sought to address the phenomenon of case management and was informed by theory, specifically the middle range nursing Theory of Transitions (Im, 2014; Meleis et al., 2000). The implementation of this project was guided by use of the Consolidated Framework for Research Implementation (CFIR, 2014).

Setting and Resources Utilized

Project implementation occurred in a 344-bed CBH in an urban setting. PRISM 1, 2, and 3 patients were most commonly admitted to one of two acuity adaptable units, a gerontology medical unit and an adult intensive care unit. Therefore, implementation of this project initially focused on these two units. Each of these units had one to two case managers working the day shift on Monday through Friday. One case manager was on duty for the day shift on Saturdays and Sundays, and covered all inpatient units.

Resources utilized for this project were as follows: 1) the time, knowledge, and commitment of key stakeholders; 2) application of the PRISM mortality risk scoring tool for all adult patients admitted through the ED; 3) the PRISM Application Manual and PRISM Bundle Summary; 4) electronic resources to include case management assessments and documentation tools located in the electronic health record; and 5) oversight, input, and data provided by the Quality Institute located at the sister organization. There were no external or supplementary costs associated with this project. Resources and personnel were available as part of the normal course of operations within the CBH. The scope of work for this project was an existing role for the Performance Improvement Coordinator. The PRISM mortality risk scoring process had been fully operationalized within the ED and was functioning under the direction of the Medical Director of Quality, Director of Professional Practice and Development, and Performance Improvement Coordinator.

Design for the Evidence-Based Initiative

The overall design for this project was built upon the existing nurse case manager process. This innovative practice change was meant to strengthen and expand, not replace, the current process. As such, an attempt at the implementation of a standard protocol set an expectation for consistency among case managers on the same unit, as well as for the delivery of case management services between the gerontology medical and adult intensive care units.

The design for this project included pre-implementation, implementation, and post-implementation phases. The pre-implementation phase was be comprised of a Gemba analysis of case manager roles on the gerontology medical and adult intensive care units; additional education to iterate the rationale behind this initiative and instruction regarding use of the PRISM scoring tool, focused on the case management team; and creation of a case management task force to design the new workflow. The implementation phase defined the case management process: PRISM score was assigned in the ED; patients admitted to the gerontology medical or adult intensive care units were the target group; case managers were to identify patients' PRISM scores using the safety page of the electronic health record; PRISM 1, 2, and 3 patients would receive timely, standardized, and individualized case management services; and PRISM 4 and 5 patients would receive case management by provider referral (Appendix G). The post-implementation phase would involve data collection and analyses, ongoing monitoring of case management services on the two units, and revision and/or addition to the protocol as indicated.

Participants and Sampling Strategies

This was a quality improvement project at a CBH in an urban setting. Primary participants included the Grand Valley State University DNP student, the Director of Professional Practice and Development, the Performance Improvement Coordinator, and the entire case management team. It was anticipated that patients admitted to the gerontology medical and adult intensive care units with a PRISM score of 1, 2, or 3 would be the focus for this project. From the case management team, the

case managers assigned to the gerontology medical and adult intensive care units would be the most intimately engaged with this project. All patients admitted to the target units with the appropriate PRISM scores were planned to receive case management services using the enhanced protocol.

Measurement: Sources of Data and Tools

Project evaluation plan with data analyses. The PRISM Mortality Risk Prediction Tool currently enacted in the ED was the driving factor of this project. Measurement of the success of this quality improvement project was to be comprised of qualitative and quantitative dimensions. Quantitative data were to be collected during the pre-implementation and post-implementation phases by means of an informal survey of the case managers; this survey was to be operationalized using SurveyMonkey, which would ensure anonymity of each responder's identity (Appendix K). The CBH subscribes to this survey tool and offered to make resources available to develop and disseminate the survey. Case managers on the gerontology medical and adult intensive care units would be asked to complete an informal 5-item Likert scale survey (Appendix K). Data describing 30-day readmission and ED visits within 30 days of discharge was to be managed by the Performance Improvement Coordinator in Cerner and shared with the DNP student.

The qualitative data component was intended to be measured during the implementation phase through formative assessment. Using an informal data collection process, qualitative information would be obtained from the case managers to evaluate the efficacy of the new protocol. To collect qualitative data, the DNP student planned to conduct informal anecdotal interviews on the two units (Appendix L). De-identified case manager comments would be electronically recorded, thematically analyzed, and presented as aggregate data. Inclusion of qualitative as well as quantitative data increases the robustness of outcomes measurement of this project.

Data collection. Quantitative data for measurement of the project objectives was arranged to be obtained from the Performance Improvement Coordinator (PIC). The PIC would be the keeper of the data and could ensure that data integrity was maintained. The PIC had a current electronic data

collection and repository system established. Data was planned to be associated with patients using the Financial Identification Number (FIN). Data shared with the DNP student regarding 30-day readmission and number of ED visits would not be connected with patients' identities (Appendix I). Success of project objectives was designed to be specifically measured as follows:

Primary Objectives

1. Reduction of number of patients readmitted to the CBH within 30 days of discharge: quantitative data obtained from the PIC
2. Reduction of number of return visits to the ED for patients discharge from the CBH within 30 days of discharge: quantitative data obtained from the PIC
3. Provision of case management services during the hospital stay to PRISM 1, 2, and 3 patients: quantitative data obtained from the PIC

Secondary Objectives

1. Improved caseload management and workflow efficiency: qualitative data obtained through formative assessment during the implementation phase
2. Increased case manager role satisfaction: qualitative data obtained through formative assessment during the implementation phase.

Steps and Timeline for Project Implementation

Original plan. The CFIR framework guided each step in the attempt to implement this project. Each phase was scheduled to follow the constructs of Domain V, Process, of the CFIR framework. The pre-implementation phase was premeditated to include the constructs of planning and engaging. The implementation phase would consist of engaging and executing. The post-implementation phase would involve reflecting and evaluating. A detailed account of the original steps and timeline planned for this project can be found in Appendix H.

Actual steps and timeline. The implementation of this project was constrained by numerous barriers, which will be discussed later in this report. Implementation of this project was met with

delays and resistance from key stakeholders, resulting in an altered timeline (Appendix R). Revisions to the original plan are described in detail later in this report.

Budget Reconciliation

No budget was required for the implementation of this project and no external or supplementary costs were incurred. All necessary resources and manpower were available as part of the normal course of operations within the CBH. The scope of work for this project was absorbed into the existing roles of stakeholders, most specifically the Project Improvement Coordinator and the case managers. One of the key responsibilities of the Project Improvement Coordinator was to spearhead the implementation of the PRISM project into case management processes.

Every action has an opportunity cost. As such, there were opportunity costs associated with this project. The project champions (Medical Director of Quality, Director of Professional Practice and Development) and the primary project implementers (Project Improvement Coordinator, DNP student) experienced opportunity costs related to time spent on this project, which may have alternatively been directed to other priorities or responsibilities. The opportunity costs to the organization resulted from the failure to implement this project; unsuccessful implementation detracted from the opportunity to reduce readmissions and the costs that result from ineffective transitions.

Ethics and Human Subjects Protection

This project involved the participation of human subjects. Review by the Grand Valley State University (GVSU) Human Research Review Committee (HRRC) was required to ensure the basic rights and welfare of all project participants were upheld (GVSU, 2017). The GVSU HRRC determined that this project did not meet the definition of research as defined by 45 CFR 46.102 and was considered to be a quality improvement project (Appendix P).

The CBH provided written authorization for this DNP student to collaborate in the project (Appendix J). In addition, CBH required submission of this project plan to its Institutional Review Board (IRB). The CBH IRB determined that this project was not human subjects research. According

to the CBH IRB, this project met the definition of clinical quality improvement measurement (Appendix Q).

Project Implementation

The Quality Institute, located at one of the largest southeast Michigan health systems, developed the PRISM Mortality Risk Tool and published results of evidence-based research suggesting the use of this tool in 2012 and 2016 (Cowen et al., 2012; Trinity Health, 2016). Assignment of a mortality risk score to patients can be used to ensure that consistent support strategies are executed early in the hospital stay, which includes defined support for transitions and handoffs to the next level of care. Use of PRISM scoring links high risk patients with appropriate approaches to care after discharge (Trinity Health, 2016).

Currently, four sister organizations of CBH utilize the PRISM tool to predict the risk of mortality of adult patients admitted through the ED and have established a variety of targeted care bundles. In 2015, the Medical Director of Quality and the Director of Professional Practice and Development became interested in bringing PRISM scoring to CBH as a means by which to address the Strategic Plan goal to reduce 30-day hospital readmissions. After consultation with the chief investigators at The Quality Institute, these two leaders at CBH applied for and received a grant from its principal health system. The grant funds were used to collect retrospective data to investigate the potential opportunity for implementation of the PRISM tool and associated care bundles. Big data from CBH patients were gathered to retrospectively assign PRISM scores; these data were then stratified by PRISM score to analyze mortality and 30-day readmission rates, return ED visits, length of stay, and numerous other statistics.

In January 2016, Quality Institute experts from the sister organization provided CBH leadership with a presentation of the original PRISM project and subsequent patient outcomes. CBH members in attendance included the President and Chief Executive Officer, Vice President and Chief Nursing Officer, Medical Directors, Nursing Directors, and Case Management Manager, as well as top

administrators of ancillary departments. In September 2016, the Project Improvement Coordinator was brought in as the administrative leader for this project.

The champions of this project (Medical Director of Quality, Director of Professional Practice and Development, and Project Improvement Coordinator) facilitated education of hospital staff during face-to-face inservices and utilized online health stream education to present the rationale for use of the PRISM tool and its potential to reduce mortality and readmissions. Education of hospital staff included ED providers, internists, hospitalists, the palliative care and rapid response teams, clinical resource coordinators, physical and occupational therapy staff, dietary staff, clinical nurse leaders, the case management team, social workers, and unit-based nursing staff. Education was completed in October 2016.

This project was the brainchild of the Medical Director of Quality and the Director of Professional Practice and Development. These project champions determined this project would include PRISM scoring of all adult medical patients in the ED and the delivery of a standardized approach to case management on all nursing units, similar to the pilot program implemented by The Quality Institute. The care bundles were patterned after this pilot program and included rapid response consult within one hour of admission, palliative care team consult, and standardized, robust case management.

In October 2016, the Project Improvement Coordinator (PIC) began meeting with the Manager of Case Management (Manager) to plan for implementation. The team of case managers was not invited to meetings nor included in the planning process. According to the PIC, while the Manager verbally expressed support for this project, throughout the ensuing months she did not involve the case managers in planning, nor did she engage in specific actions to instigate implementation. A slow roll-out of PRISM scoring in the ED began November 2, 2016 and full implementation of the PRISM tool followed in December 2016.

Project Plan A

During planning meetings at CBH in December 2016, the Director of Professional Practice and Development requested assistance of the DNP student with implementation of the case management PRISM bundle. The student was asked to collaborate with the PIC to establish the new case management process as part of the overarching PRISM care bundles. The case management component involved intentional use of the PRISM scores by the case managers to employ defined interventions for high risk patients.

The original plan was for this project to take place on two units: the acuity adaptable gerontology unit and the acuity adaptable adult intensive care unit. Once full implementation was adopted on these two units, the project was to be initiated on all remaining units. These two units were chosen because the greatest numbers of PRISM one patients are admitted to these areas. The specific case management protocol was to include the following: 1) Daily identification of new admissions using the hospital census report; 2) Case manager identification of patients scored as PRISM one, two, and three; 3) Case manager face-to-face visits with PRISM one, two, and three patients within 24 hours of admission and daily check in with these patients; 4) At least one face-to-face visit with the patient's family or responsible party prior to discharge to identify specific barriers to discharge; 5) Transition of care interventions to include Meds To Go, appointment with primary care provider within seven days of discharge, and a home health agency referral; and 6) Case management services to PRISM four and five patients by provider referral only.

Gemba analysis. Prior to implementation of the case management component, the DNP student recommended that Gemba analyses be conducted with the case managers on the two designated units. A Gemba analysis refers to assessment of a setting where the value occurs; evaluating the process of case management at the unit level where such services occurred would offer valuable information for designing the implementation plan. The DNP student understood it was important to conduct this type of assessment for several reasons. First, it had been many months since

case managers had received education about the PRISM tool. Second, there had been no meetings between the Director of Quality, Manager of Case Management, and the case managers to inform them of the plan to implement a new process in their role and there had been no promotion of the PRISM project with the case management team. Third, information had not been gathered from the case managers to understand their current workload and workflow, and it was unknown how implementation of a new process would impact care management, or if the potential for duplication of services was likely. Finally, it was important to build a relationship between the PRISM project champions and the case managers, to allow for active engagement in the process of change.

The Medical Director of Quality and the Director of Professional Practice and Development determined that this project should also include the Transition Coordinators. Transition Coordinators work in tandem with the case managers; they are responsible for coordinating the post-discharge appointments for patients. It was requested that the DNP student perform a Gemba analysis with the Transition Coordinator on the gerontology unit.

Positive findings. During the Gemba analyses on both units, all four case managers verbalized that they would appreciate and value having more time for face-to-face visits with patients and families. They recognized that a standardized protocol for determining daily workload could increase efficiency and efficacy, as currently they prioritized by the pressing needs of patients if discharge was imminent.

Negative findings. Several barriers that would ultimately impact implementation of the PRISM case management protocol were identified during the Gemba analyses. First, the case managers on both units work part-time and job share with counterparts. This lent itself to gaps in continuity of care management and follow through with services, as well as an inability of the case managers to form a cohesive relationship with each other, patients, and families. Second, the case managers attended two separate morning rounds; on the gerontology unit these rounds were held in the

conference room and on the intensive care unit there were two sets of walking rounds; collectively, these rounds consumed over two hours of the shift.

As part of their role, the case managers conducted utilization review; several hours of the day were spent in the office at the computer or on the telephone related to this task. Rounds and administrative tasks detracted from visits with patients, and were an impediment to the process of effective case management. Third, the case managers verbalized that they never use the PRISM score in determining the daily workload, and further verbalized that this score does not add value to the role of case manager. According to each case manager, the prioritization of patients by upcoming discharge date is sufficient in determining caseload. Fourth, the case managers on the intensive care unit stated that many of the PRISM one patients admitted to this unit are on the ventilator; they explained that when patients are vented, case management services are often limited until the patient is able to be weaned from the ventilator. Finally, the case managers were concerned that using only the PRISM score to determine which patients would receive services would result in some patients "falling through the cracks." The case managers maintained that all patients should be evaluated for case management needs, and that PRISM four and five patients may not receive needed services if only recommended on a referral basis.

Unexpected findings. The Gemba analysis with the Transition Coordinator on the gerontology unit revealed some surprising findings. During the three hours spent with the coordinator, there was a palpable feeling of mistrust for the DNP student. Although it was explained that the purpose of the Gemba was solely to understand the role and responsibilities of this position related to implementation of the PRISM project, it was evident that the coordinator believed otherwise. She explained that the Transition Coordinators had recently been moved from being part of the internal medicine groups, to now being managed as hospital staff. With the initial status change, the Transition Coordinators were placed under the direction of the Manager of Case Management. However, in July 2017 these

Coordinators were reassigned to the Complex Care Team and now are managed by a new director. It is believed the Transition Coordinators were fearful that their jobs may be eliminated.

The Transition Coordinator perceived this Gemba to be a fact-finding mission for the purpose of eradicating their jobs. The Gemba analysis also revealed that there is much overlap between the case manager role and the transition coordinator role. Due to the duplicity of services, there may be validity in the beliefs of the Transition Coordinators that their roles may change or be eliminated. Following this uncomfortable Gemba session, the DNP student brought the concerns of the Transition Coordinators to the attention of the Director of Professional Practice and Development. The Director explained that she and the Director of Quality (who oversees Case Management) were considering making the recommendation to executive leadership that case management and transition coordination be merged into one role.

Barriers to implementation of project plan A. The original project plan was not implemented. Although numerous meetings were held with the PIC and Manager of Case Management between November 2016 and July 2017, the Manager had not developed a sense of urgency or commitment to the case management component of the PRISM project. During a June 2017 meeting with the PIC and DNP student, the Manager informed that until the end of summer, the case management team would be short two full-time case managers. The DNP student suggested that a task force be created to include representative case managers, the PIC, and DNP student, to determine how the PRISM project could move forward. The Manager agreed to a task force, but requested that this project be referred to as "an experiment." She explained that by referring to this project as an experiment, the case managers might be more willing to implement the new process. She stated that this experiment could not begin until September, at the earliest, due to the case manager staffing shortage on other CBH units.

To promote this project, the Manager offered to allow the PIC and Medical Director of Quality to present the PRISM project during the first 30 minutes of the case management team meeting in July.

On July 11, 2017 this presentation was provided to the case management team. It must be noted that the case managers assigned to the gerontology and intensive care units were not in attendance at this team meeting. During the presentation, data relevant to mortality and readmission were emphasized, and the rationale for a robust case management process for PRISM one, two, and three patients was provided. The Director of Quality, who has ultimate responsibility for the case management department, was present and exclaimed to the group that this was "powerful data." She recommended the PRISM case management protocol be implemented on all nursing units in CBH. She stated, "We need to do this."

The Manager then stated, "We would like to put together a task force to look at if this is something we would like to do. If there are any volunteers, let me know." No volunteers came forward, and the Manager asked that anyone with interest send her an email. Immediately following the request for volunteers, the Manager reminded the case managers that the department was short two full-time staff until September, and that the PRISM project could not begin "until things get better."

These statements by the Manager undermined the Director of Quality's previous proclamation that the PRISM project for case management was a vital approach to high quality care. The unspoken message to the case managers at that moment was that the PRISM project was not a priority. At no time during the team meeting, or in the months that followed, did the Director of Quality execute a concise directive to the Manager that this project would be initiated. The Director of Quality had the authority to drive implementation forward, yet she did not provide the support needed.

Project Plan B

Based on the Director of Quality's comments during the July 11, 2017 presentation that the PRISM project should include case managers on all nursing units, the Medical Director of Quality, Director of Professional Practice and Development, and PIC decided to pull together the task force and attempt to implement the PRISM case management project on all nursing units. It was hoped that this new process would increase efficiency of the case management role, thereby decreasing the workload

for case managers on units where PRISM one, two, and three patients were not as prevalent. It was predicted that with a shift in caseload, the shortfall of two full-time case managers would be mitigated.

Barriers to implementation of project plan B. The PIC made numerous attempts to engage the Manager in establishing a task force. The Director of Quality and Manager of Case Management made no efforts to follow through, and several email requests by the PIC went unanswered. Emails from the PIC directly to the case managers requesting participation on a task force also went unanswered. Ultimately, no volunteers were elicited to create a task force. An additional setback occurred; the Medical Director of Quality began to withdraw support for this project, stating that perhaps the PRISM tool could be used by case managers in the ED for discharge planning from the ED.

A final obstacle to Plan B occurred when the Manager sent an email to all case managers informing them of "Experiment #2." This second experiment was an alternate case management staffing plan, which created a new assignment model for case management coverage on all nursing units. The new staffing plan added additional patient load to all case managers.

In a final effort to implement this project, in mid-September the Director of Professional Practice and Development met with the Director of Quality. The Director of Professional Practice and Development asked that the DNP student not attend this meeting, as she did not want the Director of Quality to misconstrue implementation as merely a student project; her aim for this meeting was to again emphasize the importance of implementing a robust case management approach targeted towards high risk patients. The Director of Quality agreed to allow a revised version of the project to be implemented on the intensive care unit, but also on the neuroscience unit instead of the gerontology unit. The new project plan would include five case managers.

Project Plan C

It was decided by the Director of Quality that Plan C would involve only patients with a PRISM one score, and was to be considered a pilot initiative to take place on the intensive care and

neuroscience units. These two units shared case managers. Two part-time case managers split the caseload on the intensive care unit, two part-time case managers split the caseload on the neuroscience unit, and one case manager floated between the two units. A Gemba analysis was performed by the DNP student and PIC with four of the five case managers. No new information was gleaned from this Gemba; the responses of these case managers were an iteration of the information obtained from previous Gembas in May and June 2017.

The new plan was as follows: 1) Provide each case manager with the informal survey tool pre- and post-implementation (Appendix K) and formative assessment survey post-implementation (Appendix L); 2) Add the PRISM score to the discharge worklist used by the case managers to determine the patients that must be seen daily, if possible for IT to add; 3) Revised transition of care interventions: at least one face-to-face visit with patient and family/significant other during the admission to identify specific barriers to discharge; home care referral for all patients discharging to home, which may include telehealth; case managers would verbally identify patients having PRISM one scores during daily rounds; case manager would identify and document barriers to discharge in the progress notes; and an appointment with the primary care provider would be scheduled within three to seven days of discharge, as arranged by the Transition Coordinator.

The PIC and the DNP student were determined to implement Plan C. The PIC indicated that an attempt to move forward would be made despite the absence of involvement from the Manager. In retrospect, the decision to forge ahead with implementation of Plan C without the support of the Manager was not prudent. Although the PIC and DNP student believed this project was an important component in the plan to reduce readmissions, the decision to move forward was an overreach of the boundaries of their roles. The Manager had sole control and authority over the case management team.

In fact, the plan to implement Plan C was unrealtistic; the PIC and DNP student had no real clout with the case managers to persuade them to implement. The PIC set the date for implementation of Plan C for November 7, 2017; a Tuesday was chosen, as Mondays are often heavier workload days

for the case managers following a weekend with no coverage. The DNP student developed a written set of instructions describing the Plan C care bundle for the case managers; each case manager was provided this reference document.

The PIC requested that the case managers begin identifying PRISM one patients and make them a priority on their caseload, in addition to delivery of the targeted care bundle. The case managers chose to not implement. When approached by the DNP student, no case manager was using the Plan C reference guide. During the week of planned implementation of Plan C, the case management continued with their usual workflow without consideration of PRISM score. They stated use of PRISM does not impact which patients they see, nor does the score reflect the case management needs of the patients specific to the intensive care and neuroscience units.

Barriers to implementation of plan C. Each of the five case managers on the intensive care and neuroscience units were provided with the pre-implementation informal survey (Appendix K). Only one case manager returned the survey; the other four did not return a completed survey despite two email requests by the DNP student and one email request from the PIC asking for completion and return. In regards to adding the PRISM score to the discharge worklist used by the case managers, it was determined by the information technology department that this was not possible. To find the patient's PRISM score, it was necessary for the case managers to open the safety page in the electronic health record for each individual patient; as the case managers find the PRISM score to be of no value to the delivery of services, they were unwilling to intentionally go into the EHR to obtain the scores.

The case managers on the intensive care unit reiterated that PRISM scores are not indicated in determining their workload for two reasons. First, some PRISM one patients are ventilated, which inhibits robust transition management. Second, most patients transfer from the intensive care unit to other units prior to discharge, and case management is then handed off to another case manager. The neuroscience case managers indicated that the patients on this unit all require case management, regardless of the PRISM score, due to the more complex care needs of these patients.

Project Outcomes

Quality Improvement Projects

Healthcare organizations working to improve the quality and safety of care and the patient experience encounter formidable challenges. Difficulties with implementation of quality improvement processes often are the result of failure to align culture, behaviors, and practices across the organization with the needs and priorities of individuals and groups impacted by the change (AHRQ, 2017b). Current evidence suggests that nearly 60 to 70% of all quality improvement projects fail to yield the intended results (Six Sigma, 2014). Yet, learning from failure is a valuable aspect of the quality improvement process. "Failing forward" can be an important force in driving success; attempts that end in failure provide the stimulus for further assessment of barriers and facilitators pertinent to the change environment.

Consolidated Framework for Implementation Research

When considering implementation of a quality improvement process, it is essential that project champions understand the value of implementation theory and how to utilize constructs of theory to enhance success. Application of the constructs of the Consolidated Framework for Implementation Research or other change theory by project champions at the onset of this initiative in January 2016 would have greatly improved the likelihood of successful implementation of the PRISM case management project.

Construct I: intervention characteristics. The decision to adopt and implement this project in 2016 was made by leaders high up in the organization, without input from the frontline users. Although evidence supporting the validity of the PRISM tool was strong, project champions failed to build a compelling case that the project would have the desired outcomes. There was an absence of empirical support for dissemination of the interventions among the case management team. The relative advantage of the PRISM interventions was not made clearly visible and thus key stakeholders could not embrace the perceived advantage of implementation.

The DNP student provided education to the case managers on the gerontology, intensive care, and neuroscience units during Gemba analyses. During these sessions, the DNP student and case managers discussed the rationale for and benefits of use of PRISM scores and implementation of standardized case management. Alignment of this project with the Strategic Plan of the CBH, mortality and readmission rate reduction, the potential negative consequences of 30-day readmissions, and the possibility of a streamlined workflow were emphasized during interactions with the case managers.

The potential to which the PRISM case management interventions were adaptable at CBH was high. The core components of the suggested PRISM case management bundle could have been easily tailored and refined for use at CBH. The interventions could have evolved over the course of implementation as guided by the CFIR. However, the tension between the need for consistent implementation across several units and the large degree of autonomy in the case management role resulted in pushback from key stakeholders.

Construct III: inner setting. The social architecture within CBH was found to be an impediment to successful implementation of this project. Due to the nature of healthcare, the environment of CBH is clustered into independent departments. The independent and differentiated functions of the case management team resulted in competing priorities, which were dissimilar to the priorities of the champions of this project. The social capital at CBH was such that a shared vision was not achieved. The connections and communication among the case management team and project champions was weak, with an absence of networking and teamwork, resulting in ineffective implementation. For example, the Medical Director of Quality and the Director of Professional Practice and Development, although in positions high in the organization, had no direct power or influence over the case management team. Therefore, collective action among the project champions and the case management team to implement this project was not achieved.

A tension for change is a strong antecedent for implementation success (CFIR, 2014). The degree to which stakeholders perceived the need for change was highly variable. While the project champions identified a clear need for process change as supported by mortality and readmission evidence, the case management team perceived the current processes for transition planning to be satisfactory. An acute sense of the need for change was not apparent nor embraced by the Manager of Case Management nor the case managers themselves.

Individuals' shared perceptions of the importance of this project also varied. Perceptions of relative priority are a significant predictor of implementation success (CFIR, 2014). The project champions believed the relative priority of this project to be high and regarded implementation as an important priority. On the other hand, the case management team regarded this project as a distraction from their real work. This variability in beliefs about relative priority led to a weak implementation climate.

The commitment, involvement, and accountability of leaders can have a powerful influence on implementation (CFIR, 2014). Leadership support and active interest leads to a stronger implementation climate. Although the Medical Director of Quality and Director of Professional Practice and Development spearheaded this project as champions in 2016 and considered it to be an opportunity to achieve organizational goals, competing responsibilities within their positions inhibited consistent presence at the table during essential meetings. Strong champion engagement is an important dimension in successful implementation of the original plan.

The PIC held primary responsibility for driving the project forward. Over the course of several months, the DNP student suggested strategic plan meetings with the PIC. The DNP student met with the PIC for lengthy meetings in May, June, July 2017 to strategize next steps. Next steps recommended by the student included creation of a task force to include representatives from the case management team, creation of a revised care bundle to directly align with the causes for readmission,

and reallocation of case manager resources to meet the needs of higher acuity units. The PIC made several attempts to schedule meetings with key stakeholders without success.

Construct IV: process. Involvement of key individuals early in the implementation process is crucial for successful change (CFIR, 2014). It is vital that key stakeholders are engaged early in the change process. The identification of specific individuals as opinion leaders and change agents is essential; these agents of change are influential in bolstering the buy in and commitment of those impacted by the implementation process. While the case management team received education related to the PRISM tool, individuals with a deep understanding of the importance of this project were not discovered. In addition, many months passed between the education sessions and the attempt at implementation. Formally appointed internal implementation leaders held responsibility for this project. Implementation was considered as inclusive of their roles; however, only the PIC had explicit time to dedicate fully to this project. All three champions displayed a passion and creativity for this project. The characteristics of an implementation champion include dedication to driving through, overcoming indifference and resistance, and the willingness to take risks and actively associate with the intervention.

Effective implementation is dependent upon formal planning. The quality of execution is determined by degree of fidelity of implementation according to the planned course of action. Successful implementation is also contingent upon the timeliness of execution and the degree of engagement of key stakeholders (CFIR, 2014). The failure of this project was the result of unresponsiveness of case management stakeholders, unequivocally due to an absence of early involvement and buy-in of this team. Lack of involvement early on resulted in a disengaged case management team and the impossibility of forward movement. The threats to the fidelity of the original project plan stemming from such disengagement was a root cause for project failure.

Dissection of the Root Causes of Implementation Failure

The Big Picture

In 2015, project champions (Medical Director of Quality and Director of Professional Practice and Development) were inspired by the previous work of The Quality Institute to align the Strategic Plan of CBH with application of a mortality risk prediction tool to improve patient outcomes. The overarching goal of the project champions was to reduce the occurrence of readmissions within 30 days of discharge. These champions believed that operationalizing the PRISM Mortality Risk Prediction Tool in the ED would influence resource allocation of services to patients. Based upon the patient's risk score, appropriate and timely resource allocation for bed assignment, rapid response services, advanced care planning, palliative care consultation, and case management services could be provided.

The overarching opportunity created by application of the PRISM Mortality Risk Prediction Tool was the potential for improvement of the patient experience, increased quality and safety of care, and improvement in staff engagement and satisfaction. These opportunities directly aligned with CBH's FY 2018 Strategic Plan. As a component of the overarching goal to reduce readmissions, this project was a quality improvement initiative designed to change the process of case management at CBH. It was hoped that by identifying high risk patients using the PRISM score, case management services would target these patients to reduce 30-day readmission rates.

The project champions believed that an intentional case management focus towards high risk patients would have direct and indirect value. The direct significance would result from a decrease in readmissions within 30 days, by providing high risk patients with specific planning, education, and interventions aimed at improving success after discharge. The indirect value would be achieved through an efficient case management workflow, reduction in the number of patients on caseload, and an increase in case management engagement and role satisfaction. Unfortunately, this project could

not be successfully implemented due to several overarching barriers. Informal interviews were conducted with key stakeholders to uncover and explore the root causes for failure.

Informal Interviews with Project Stakeholders

The original project plan, as well as two iterations of the project, were unsuccessful. To further explore the barriers that resulted in implementation failure, key stakeholders were interviewed. The qualitative data provided by these stakeholders added rich and meaningful insight for interpretation of the failure. Thematic analysis of the responses revealed several overarching themes that were indicative of the root causes for failure. Table 3 (Appendix S) provides a summary of the themes uncovered during informal interviews with project stakeholders. Failure of this project to move forward can be understood through the dissection of these root causes.

Dissection of the Root Causes of Implementation Failure

The failure of the original and revised implementation plans for this project was the result of many barriers. The fundamental obstacle to this project was the failure to operationalize an implementation or change theory as a guide to execution. The effective execution of strategies for transformational change in a setting such as CBH requires the knowledge and skill to move people in the same direction. Change is a journey that requires movement across silos, overcoming negativity and adversity, and fostering collaboration. Successful implementation of a quality improvement project requires shared vision and common goals. The failure of this project resulted from multiple predominant barriers that can be described by several themes: poorly designed implementation plan, competing priorities within CBH, lack of leadership, and because of the highly autonomous role of the case managers.

Poorly defined implementation plan. This project was initiated by the Medical Director of Quality and the Director of Professional Practice and Development as part of an overarching plan to reduce readmissions. The PIC was given the responsibility for the development and implementation of the case management process that would incorporate use of the PRISM score. Hospital-wide

education was presented at all levels, which included executive leadership, administrative leaders, mid-level and unit managers, and front-line staff.

Education. The focus of hospital-wide education included the PRISM Mortality Risk Prediction Tool, presentation of mortality and readmission data specific to CBH, and rationale for PRISM scoring of patients in the ED. There were two primary breakdowns related to education. First, the case managers did not receive specific education designed to connect how their role influences the reduction of readmissions. To ensure buy-in and commitment, the PIC should have held group education sessions with the case management team to promote a clear understanding of the big picture. Second, hospital-wide education was completed by the end of November 2016. This project was not brought forward to the case managers again until May 2017; so much time had lapsed between the education they had received and the push for implementation, that they no longer remembered or cared about what they had learned about PRISM. The DNP student began Gemba sessions with the case managers in May 2017. During these sessions, the DNP student provided education to the case managers related to the rationale for PRISM and its relevance in their role.

Inclusion in plan development. The case management team, to include the Director of Quality, Manager of Case Management, and the case managers, were not invited to design a new case management process; instead, the design was replicated from The Quality Institute and coordinated by the PIC. While meetings between the PIC and Manager began in October 2016, the case managers themselves were not brought to the table to discuss their roles, workflow, and caseload. In addition, the PIC did not involve the Director of Quality in this project until June 2017, when it became apparent that the project "was not getting any traction."

Prior to the creation of a new process, a deep dive into the current case management process should have been completed to gain an in-depth understanding of the strengths, weaknesses, gaps, and opportunities that existed. Role exploration should have included Gemba analysis early in the

planning stages. As stated previously, Gemba analysis of the case manager role did not occur until the DNP student conducted these studies beginning in May 2017.

Early engagement of the case managers in the design of this project would have helped to identify that the project care bundle was already being provided to patients. The project champions and PIC had independently made the decision to apply the care bundles used by the sister organizations. Inclusion of the case managers may have led to creation of a care bundle that would have been more effective in reducing readmissions for CBH patients. As such, the case managers perceived this project to be no different from the services they were already providing.

During meetings between the PIC and DNP student in June and July 2017, following Gemba analyses with the case managers and transition coordinators, the DNP student suggested creation of a task force. A case management task force would allow input into the change in workflow. The case managers, as stakeholders with the most potential to implement this project successfully, should have been engaged in the process of change. Unfortunately, without a clear directive from the Manager, the PIC and DNP student were unable to establish a task force.

Lack of a timeline. Once hospital-wide education was completed, the use of the PRISM tool for scoring adult medical patients began in the ED. By January 2017, nearly 85% of patients were receiving a score. The overall PRISM project components included assessment of the score to determine bed assignment, rapid response nurse visit to all PRISM one patients within one hour of admission to the unit, a palliative care team consult for all PRISM one patients, and a robust case management process for PRISM one, two, and three patients. Although the scoring of patients in the ED was implemented within two months, the other aspects of the initiative were not clearly defined by a timeline. A timeline would have been an imperative tool for sustaining project momentum to keep progress on track.

The DNP student established a scheduled timeline for the case management project. This timeline was provided to the Director of Professional Practice and Development and the PIC.

Numerous meetings with the PIC, DNP student, Director of Quality, and Manager of Case Management took place, yet failed to yield any forward movement. The Manager was unwilling to give the directive to the case managers to implement and the PIC had no authority to move ahead, as will be discussed later in this paper.

Competing priorities. There were significant other priorities in progress at CBH simultaneously during attempted implementation of this project. These competing priorities resulted in time constraints and role burden for the project champions, PIC, Director of Quality, Manager, and case managers. Responsibility for multiple projects made it difficult for key stakeholders to attend project meetings and detracted from the sense of urgency for this project.

Magnet status designation. CBH is currently seeking re-designation of Magnet status. The Director of Professional Practice and Development is responsible for oversight of the Magnet Coordinator, and was heavily engaged in the submission process. CBH continued to work on the submission documents required for Magnet recognition. Magnet recognition is an urgent priority for CBH, as this status is a prestigious designation of excellence.

Joint Commission survey. CBH is preparing for its Joint Commission survey in January 2018. The PIC was involved in the mock survey process in September 2017. The mock survey process required her full attention for several weeks, during which time she was unable attend to any project business. The results of the mock survey revealed issues that required the immediate attention of the Director of Quality. The DNP student was informed by the PIC that an upcoming meeting with this Director must be cancelled, and that the focus was now shifted to making the necessary preparations for The Joint Commission survey.

FY18 strategic plan projects. The executive boardroom has an entire wall dedicated to the FY18 Strategic Plan and the process improvement plans. CBH teams are assigned to these plans. The Medical Director of Quality and the Director of Professional Practice and Development are engaged in multiple projects. Urgent CBH initiatives are centered on not only readmission, but on prevention and

reduction of hospital acquired infections and an enhanced patient experience. The number of projects in progress dilutes the importance of this project.

COSE scores. The Culture of Safety and Engagement survey scores are indicative of the climate at CBH. Scoring is based on three tiers, with Tier One indicating that employees feel the safest and most engaged in their departments. CBH believes COSE scores are directly related to patient outcomes. The case management department COSE scores were below Tier One.

These scores have created an alternative agenda for the Manager of Case Management; with concern about the climate in her department, she is hesitant to make decisions which may be unpopular with the case managers. The pressure to increase COSE scores has limited her abilities as the leader of her team. The Manager verbalized at several meetings that although her team was excited about change and this project is the right thing to do, she was concerned about making any changes at that time and her team was not ready for change. The DNP student pressed for more details and was told that "short-staffing" and increased caseloads make implementation impossible. The Manager was unwilling to consider that this project could, in fact, decrease caseloads and make the case managers' work more efficient.

Staffing issues. The case management team lost two full-time case managers in June 2017. In previous years, the staffing model allowed for two full-time case managers on every nursing unit; however, the current staffing model allows for one full-time case manager on each unit. This was complicated by the fact that most case managers work part-time and share the role with another part-time person. Short-staffing, increased patient complexity, and an increase in workplace violence have diminished the case managers' resiliency. The case managers perceive this project to be just one more thing that adds to their caseload.

Lack of leadership. Implementation of this project failed as a result of lack of leadership at every level. There was no "top down" push to establish support for this project. The Vice President and Chief Nursing Officer had no involvement with this project. Although key stakeholders with the

capacity to influence change understood the value of the PRISM initiative, these leaders were not engaged throughout the process.

Project champions. The Medical Director of Quality and the Director of Professional Practice and Development handed this project over to the PIC. Because each of these champions was involved in multiple other CBH initiative and priorities, their attendance at meetings was sporadic. The Medical Director of Quality often cancelled the routine bi-weekly update meetings. If the Director of Professional Practice and Development was in attendance, she frequently left the meeting early to attend to other responsibilities. As the PIC stated, "I rarely had a meeting with both; it was either one or the other."

A major detriment to the success of this project was the lack of authority of these champions over the case management team. Neither champion had any authority to give directives to the Manager or case managers. Furthermore, these champions did not elicit the support of executive leadership to establish this project as a priority. Specifically, the Vice President and Chief Nursing Officer was a vital stakeholder with the power to advance this project. The DNP student questioned the involvement of the executive leadership and was informed that this project rested upon the project champions and the PIC.

Project improvement coordinator. The PIC was hired to manage this project. Her performance was excellent in completing the hospital-wide education, management of PRISM data, implementing the rapid response nurse and palliative care components of the PRISM initiative, and increasing the percentage of PRISM scoring in the ED. She admits that her title of "Coordinator" inhibited her from having the respect of the case management team and that she had no authority to direct the case managers to implement. The PIC recognized that the Manager of Case Management had no commitment to this project, and was frustrated with the lack of action by both the Manager and the Director of Quality. The PIC stated, "You can't move a project forward when certain individuals don't want to move." The DNP student and the PIC worked closely on this project from April to

November 2017. Together they created reasonable and achievable iterations of this project. However, without a leader with authority to mandate implementation, this project failed.

Director of Quality. The Director of Quality was not actively invited to engage in this project until June 2017. By the PIC's admission, she did not involve the Director of Quality until the project "was not getting any traction." During meetings with the PIC, Director of Quality, and DNP student, it was noted that the Director was skeptical of the benefits of using the PRISM score to allocate case management resources; she verbalized that most patients admitted to the hospital have a degree of complexity and require case management services. She was uncomfortable with the idea of PRISM four and five patients being seen only by referral.

However, during the July 2017 presentation, she stated that the readmission and mortality data could not be denied; she supported the implementation of this project on all nursing units. Although she was now in full support, the Director of Quality did not direct the Manager of Case Management to implement, nor did she follow up with the Manager at any point after the July meeting. During the September 2017 meeting with the Director of Professional Practice and Development, she was very surprised to learn that the project had not been implemented.

She then agreed to allow implementation on the intensive care and neuroscience units, as she believed the case managers on these two units would be most apt to agree to implement; at this point she requested that the project be promoted as a pilot. Her rationale for changing the project to pilot status was to make it clear that this may not be a permanent change. Again, the Director of Quality did not inform the Manager, nor did she give a directive that implementation begin on these two units.

Once the go-ahead was given to proceed on the intensive care and neuroscience units, the DNP student and PIC conducted Gemba analyses with four of the five case managers. The informal pre-implementation survey was given to all five case managers. Several attempts to collect the surveys were unsuccessful, and only one case manager returned a completed survey. The DNP student

received no response from the four case managers as to why they could not or would not complete the survey.

Manager of Case Management. The Manager of Case Management had full authority to implement this project. She was in a position to impart a directive to the case managers to move forward with the implementation plan. However, at no time over the course of the year did she make any attempt to engage her team to implement this project. This Manager had several significant competing priorities.

The FY18 Strategic Plan includes a plan to increase COSE scores. Her department scored below Tier One, and she is charged with improving the climate of safety and engagement of her staff. The staffing shortage, increased caseload, and rise in patient complexity undermined her judgment and capacity as a leader. She was hesitant to implement any change that would further degrade morale and cohesiveness among the case management team. The Manager was the most important stakeholder for implementation of this project. Without her support, the project failed.

DNP student. The DNP student was solicited by the Director of Professional Practice and Development to assist with this project. The role of the student was to begin with implementation. Once implementation has been initiated, the DNP student would provide support and oversight on the units to ensure that the PRISM scores were utilized to allocate services, oversee the delivery of the care bundle, and work with the PIC to collect and analyze data. It was made clear to the DNP student that her involvement with the case management team should be in tandem with the PIC; the project champions did not want the team to misconstrue this project as merely a DNP project. It was explained that the work of this project itself could not be seen as a student process. If the DNP student had implemented this project in its original form on the gerontology and intensive care units, at the present time with the current barriers, the project would not have been sustainable.

The DNP student felt highly engaged and included in this project by both the Director of Professional Practice and Development and the PIC. The student's opinions and input were actively

sought and respected; the PIC made the student feel welcome as part of the project team. At the request of the Director of Professional Practice and Development, there were occasional times when the student was asked not to attend meetings held with the Director of Quality and PIC for reasons stated above. Overall, the DNP student felt as though her contributions were appreciated and valuable.

Highly autonomous role of case managers. The case managers have a very autonomous role. They essentially work independently and have little to no oversight by the Manager. During the Gemba analyses, it was discovered that the case managers are not held accountable for patient outcomes, such as return to the ED, readmission, or poorly coordinated transitions to the next level of care. The case managers have the autonomy to determine what patients they see or do not see, what discharge disposition is arranged, and what post-discharge interventions are provided. They do not have accountability for face-to-face visits, and have no established protocols to follow. The autonomy of the case manager role was another critical root cause for implementation failure. Simply put, no directive was given to them and thus they did not have to implement this project. Several factors related to the independent nature of this role were the impetus for barriers.

Caseload. The case managers perceived themselves to be stretched too thin. The overall goal, as stated during the Gemba analyses, was to see all patients. However, the Gemba analysis revealed that case managers make no attempt to see all patients regardless of the number of patients on caseload. In July 2017, the Manager executed a new staffing plan (Experiment 2), which added additional caseload to each case manager's assignment. While the two full-time positions that were vacated in the summer were expected to be filled, these two positions remained open.

Perception of role. There was a divergence between the goals of the project champions and the goals of the case managers. The case managers envisioned their role to be that of disposition; the goal was to discharge patients within the predetermined length of stay. Length of stay is associated with reimbursement, and was a critical factor discussed in daily rounds. The case managers experience

pressure to discharge patients within the expected length of stay. As the PIC described, the case managers are "stuck in the hospital."

The mindset of the case manager lies in getting the patient out of the hospital; what happens after discharge is not a consideration and interventions are not aimed at successfully avoiding readmissions. At the current time, the case managers are perceived as having no skin in the game, referring to the problem of readmissions. They do not understand how readmissions impact them directly. The perception of their role is that it revolves around census and discharge.

Silo mentality. Most case managers have part-time status and share their role with another case manager on the same unit. They work several days consecutively and have several days off in between. Case managers expressed negativity about covering other units and assisting case managers other than on their own unit. Case managers and transition coordinators were concerned about position cuts, having to work on other units, and having to work weekends and holidays if the PRISM process was implemented; these concerns detracted from the perceived relative advantage of the project. Part-time status and assignment to one unit has resulted in silos of care. Because the case managers do not work full-time, have large gaps between days worked, and feel disconnected from the case managers on other units, it was impossible to establish commitment or a sense of urgency for this project.

Summary of Barriers to Implementation

The implementation failure of this project was related to numerous and significant barriers. Predominant themes were identified as: 1) poorly designed implementation plan, 2) competing priorities within CBH, 3) lack of leadership, and 4) the highly autonomous role of the case managers. Application of a clearly established implementation plan and creation of an implementation timeline could have kept key stakeholders on track. However, the absence of support from executive leadership, the lack of authority of the project champions over the case management team, and the unwillingness of the case management leaders to mandate implementation of this project created interminable barriers.

The presence of competing priorities at CBH was a significant detriment to this project. The importance and urgency of these priorities, to include Magnet recognition renewal, the upcoming Joint Commission survey, and the need to restructure care coordination roles and processes, makes it evident that the timing was not right for this project. The challenging barriers generated by the difficult climate of the case management department, as indicated by the lower COSE scores, exacerbated implementation failure. The independent nature and lack of accountability within the case manager position, decreased resilience for change, disengagement as a team, and incongruence between project champion and case management priorities undermined the successful implementation of this project.

Since September 2017, a critical committee has been evaluating care coordination and the roles of case managers, transition coordinators, nurse navigators, and clinical nurse leaders. The evaluation of these positions and the overlap in services has created a heightened awareness of the possible changes on the horizon, and as described by the Director of Professional Practice and Development, "people are nervous." With so many significant competing priorities and the need for change in other aspects of CBH, the question of whether the time was not right for the case management component of PRISM is salient.

Summary of Important Successes

The Medical Director of Quality and PIC continue to work towards the reduction of 30-day readmission rates and have now shifted their focus to interventions provided by the Transition Coordinators. Although implementation of the case management portion of the PRISM project at CBH was not successful, other components of the PRISM initiative were implemented effectively. In the ED, approximately 89% of adult medical patients are now scored using the PRISM tool. The Rapid Response Team is seeing PRISM one patients admitted through the ED within one hour of arrival on the nursing units. The Palliative Care Team is providing consults to all PRISM one patients.

Limitations

A considerable limitation of this project was the ill-defined implementation plan and absence of a detailed timeline. The project champions did not utilize an implementation model as a guide to execution, which resulted in gaps in crucial steps for success. The executive leadership team was invisible and stakeholders with the authority to drive implementation were not committed. Project champions failed to engage front-line stakeholders early in the project to gain buy-in and to include them in the planning and design of the project.

An additional limitation of this project was the presence of urgent competing priorities in progress at CBH during the attempt at implementation. These priorities created significant time constraints for project champions and key stakeholders, and detracted from the commitment to and sense of urgency for this project. Collectively, all of these limitations led to a lack of stakeholder consensus of the goal of this project, primarily the reduction of 30-day readmissions.

Reflections on DNP Essentials Applied During this Project

Preparation for the Doctor of Nursing Practice (DNP) role encompasses a broad range of knowledge and skills. The DNP must be competent in many essential areas to successfully engage in higher level practice. The Essentials of Doctoral Education for Advanced Nursing Practice established by the American Association of Colleges of Nursing (2006) provided a foundation for the knowledge, attitudes, and skills applied throughout this project.

Essential I: Scientific underpinnings for practice. Integration of science-based theories and concepts to guide healthcare delivery and inform actions and strategies to develop new practice approaches is essential to the success of quality improvement. During this project, the nursing middle range Theory of Transitions provided a philosophical perspective from which to understand the phenomenon of care transitions; this theory was used to link research-based evidence with a plan for operationalization of the project. The Consolidated Framework for Implementation Research was

applied to guide the organizational assessment, and was also highly valuable in analyzing the facilitators and barriers to this project.

The importance of using an implementation theory or model to guide execution of quality improvement was emphasized by the failure to implement this project. It was evident that following the steps for assessment of the climate, careful planning, engagement of key stakeholders, and evaluation of barriers at the onset of the project in 2016 would have increased the potential for success. Quality improvement must be carefully and intentionally designed using evidence-based techniques.

Essential II: Organizational and systems leadership. It is necessary for the DNP to apply organizational and systems leadership to improve patient and healthcare outcomes. This essential was evident during the performance of a comprehensive, descriptive, and analytical organizational assessment. Use of advanced communication skills and processes were also employed during this quality improvement initiative at CBH; the case management team was often disengaged making communication difficult. This project afforded the opportunity to practice persistence and resilience. It was important to understand the competing priorities in progress at CBH and to recognize the barriers to implementation. Adapting to implementation failure meant creating iterations of the project, and making multiple attempts at engaging stakeholders at the point of care.

Essential III: Clinical scholarship and analytical methods. Clinical scholarship is essential for the investigation of current research, critical appraisal of the evidence, translation of valid evidence into the practice setting. This project involved conducting an in-depth literature review and discovery of current evidence to support and defend the value of this project. This project allowed use of analytic methods to critically evaluate the evidence, gauge the design of the project, and assess implementation methods.

Essential IV: Information systems/technology. Knowledge and skills related to information systems and technology for the improvement and transformation of healthcare were applied during this project. Technical skills were necessary to navigate the CBH's electronic health record and databases.

It was initially hoped that the PRISM score could be inserted into the daily discharge tool used by the case managers; however, in working with the IT department it was determined that this was not possible. This project highlighted the importance of technology in the day to day operations of the case managers, and the barrier created when the essential PRISM score could not be made easily identifiable in the patient record. A suitable solution will need to be determined if this project continues.

Essential V: Health care policy for advocacy in health care. Knowledge of healthcare policy is indispensable to facilitate the delivery of healthcare within the boundaries of regulation. Federal healthcare policy related to Centers for Medicare and Medicaid regulation, hospital readmission penalties, consumer reporting programs, and federal innovative programs were explored. The relationship among these policies and the project objectives was critically analyzed. Policy is a strong influence for the quality improvement process and was a driving force for this project; the reduction in hospital readmissions is critical to the well-being of CBH as an organization and for the well-being of patients.

Essential VI: Interprofessional collaboration. The ability to effectively communicate and collaborate in complex environments with members from a wide range of healthcare professions, as well as other professions is an essential DNP skill. This project afforded the opportunity to collaborate with individuals and groups from multiple departments and disciplines. At times, members of the case management team were difficult to interact with, which required patience, professionalism, and creative tactics. One lesson learned from this project is that it is possible to cultivate mutual respect and effectively communicate with adversarial members of a team, by maintaining professional communication techniques.

Another lesson learned from this project is that collaboration is essential for creating a successful climate for change. Project champions failed to engage the case management team at the onset of this project; crucial stakeholders (the case management team) were not included in the

planning and creation of the project interventions. Absence of key players resulted in malalignment of goals among the project champions and case management team, and a lack of shared vision and commitment.

Essential VII: Clinical prevention and population health. Health promotion of PRISM one, two, and three patients was the focus of this project through the reduction of risk for hospital readmission. This project involved evaluation of the care delivery model and strategies utilized by CBH's case managers. Scientific data related to aggregate and population health statistics was analyzed and understood to be a compelling factor for the implementation of this project.

Essential VIII: Advanced nursing practice. Healthcare is complex and prone to wicked problems. The DNP, as an advanced practice nurse, is well-positioned with sophisticated knowledge to impact the delivery of high quality, safe care. This project provided the opportunity to conduct a comprehensive and systematic assessment at the organizational level, practice implementation of a quality improvement process in a complex setting, and establish professional relationships. This project also promoted advanced levels of systems thinking and deep evaluation of the quality improvement process.

Lessons Learned from Implementation Failure

Failure to implement a successful quality improvement project at CBH was a disappointment. However, the value that was attained from dissection of the barriers that led to implementation failure was immeasurable in terms of health systems leadership experience. Identification of the root causes for failure resulted in important lessons learned.

An important aspect of quality improvement is the use of a formal theory or model to guide the process from start to finish. Application of an implementation model ensures that critical steps are not missed. The first lesson learned was that a comprehensive organizational assessment must include a drill down to the departmental level, particularly to the level of front-line stakeholders. Use of the CFIR model was very useful during the assessment of organizational readiness for change. The failure

of this project exposed a crucial missing aspect of the organizational assessment completed by the DNP student in May 2017.

The organizational assessment should have included a drill down to the case management departmental level, as the success of this project was contingent upon the buy-in, commitment, and support of the Manager of Case Management and the case managers. However, at the time the organizational assessment was performed at CBH, the DNP student's role with the PRISM project was not fully defined; it was not clear that this project would specifically involve the case management aspect. Had the exact project plan been known, it would have been essential to evaluate the culture and climate among the case management team. While the organization itself may have supported change, barriers at the point of service resulted in failure.

A thorough assessment of the case managers' responsibilities, perceptions of their role, understanding of the PRISM project, and relationships with each other and their leaders would have pointed to the potential pitfalls to success of this project. Another missing piece of the organizational assessment involved the Director of Quality and Manager of Case Management, as they both held positions of authority over the case managers. A shortcoming of the organizational assessment was in not performing in-depth analyses with these two leaders. Had these analyses been performed, to include personal interviews, the DNP student would have gained an understanding of the significant challenges of competing priorities faced by both, which ultimately limited the implementation of this project. Therefore, a clearly defined project plan would have been helpful in guiding the organizational assessment.

The second lesson learned is that the process of quality improvement must inform and engage all key stakeholders at the very beginning of the project. Collaboration must be strong and immediate among project champions and stakeholders who will be most impacted by the change; these stakeholders must be given the opportunity to plan, design, and implement the change. Support and

commitment to the project by all stakeholders is necessary for successful and sustainable change. In addition, all stakeholders must understand the value of and need for the change.

In retrospect, following a deep dive into the case management department climate, it would have been ideal if the DNP student had been able to establish a trusting relationship with the case managers. The DNP student could have created an education plan to promote the importance of implementation of this project. Education could have included data specific to CBH related to mortality rates, readmission rates, and the causes for readmission stratified by PRISM scores. The DNP student could then have been instrumental in establishing a project task force to engage the case managers in the design of the project and the plan for implementation.

A third lesson learned is that for a quality improvement project to be successful and sustainable in an environment of competing or urgent priorities, these priorities must be carefully managed. Competing priorities stand in the way of implementation by increasing stress and tension among stakeholders and decreasing stakeholder engagement. The success of implementation depends upon full participation and contribution of all stakeholders. Thus, competing priorities must be managed through the assignment of highly focused, competent project managers and project champions.

Finally, one of most important lessons learned is that intentional and on-going communication among project champions and stakeholders is crucial for forward movement and success. During the attempted implementation of this project, assumptions were made by the Director of Professional Practice and Development and the Director of Quality that progress was occurring with project implementation. It had been assumed that since the Director of Quality had articulated support for this project during the July 2017 presentation, implementation was moving forward. In hindsight, the DNP student and PIC should have maintained consistent communication with the Director of Professional Practice and Development through regular project update meetings, as well as with the DNP student's project advisor.

One final communication error must be mentioned. The DNP student assumed that her role with this project was secondary to that of the PIC. The project champions expressed the importance that this project to be viewed as a quality improvement project aligned with the CBH Strategic Plan, and not merely as a student project. As such, this student felt constrained in engaging in the health system leadership role to the full extent of her knowledge, skill, and capabilities. In hindsight, the DNP should have expressed concern to the Director of Professional Practice and Development and PIC that the project was not allowing her the necessary autonomy and experiences early in the relationship.

Implications for Practice

The importance of rigorous, comprehensive, collaborative case management cannot be overemphasized. Innovative new case management programs should include and engage nurses as leaders of these processes. An effective case management program is an important component of safe, quality care that reduces readmissions, decreases return visits to the ED, and improves patient and case manager satisfaction.

The prevention of hospital readmissions, especially within 30 days of discharge, is a national priority and a federally-mandated requirement. It is imperative that CBH continue to promote its Strategic Plan to reduce 30-day readmissions. The question is no longer *if* readmissions can be reduced but *how*. The PRISM Mortality Risk Prediction Tool is an important component in any initiative to improve transitions and reduce readmissions.

It is recommended that the PRISM score be utilized in all aspects of care delivery to identify high risk patients. As such, it is suggested that making the PRISM score obviously apparent to all users in the electronic health record become an IT priority. Greater accessibility to the PRISM score, as well as the association of the score to patient complexity may influence decisions about care delivery. It is further recommended that the PRISM score be announced during shift-to-shift handoffs and daily rounds. The PRISM score must become embedded in the culture of CBH.

Transition coordination and the transition process are vital components for the reduction of readmissions. It is recommended that the project champions and PIC deliver presentations to the care coordination staff, to include case managers, transition coordinators, nurse navigators, and clinical nurse leaders. These presentations must emphasize the causes for patient readmission, which include inappropriate discharge setting, lack of community support, refusal of home health or telehealth services, exacerbation of health conditions, and other conditions. Collaboration among the project champions and care coordinators to develop explicit approaches aimed at mitigating the causes of readmission may prove more valuable than the proposed project care bundle.

Finally, it is suggested that the roles of case managers and transition coordinators be closely evaluated for overlap and duplicity of services. This has already been established as an urgent priority at CBH; a committee has convened to take a deep dive into the roles of case managers, transition coordinators, nurse navigators, and clinical nurse leaders. Redefining roles will decrease role overlap and duplicity of services, increase inefficiency of transition coordination, and improve the overall success of the transition process.

Plans for Dissemination of Lessons Learned

The dissemination of lessons learned from project implementation failure will occur at three distinct points of contact: organization, university and professional nursing community. The final project report will be shared with the Director of Professional Practice and Development. The barriers to implementation failure and lessons learned about the quality improvement process will be revealed to the university by means of a final presentation of the project to the project team, invited guests, and other attendees. A poster presentation will be conducted at the Kirkhof College of Nursing to disseminate findings to faculty, staff, students, and other interested individuals. The final project report will be distributed to the professional nursing community and academic public through publication in ScholarWorks. In addition, submission to professional scholarly journals for publication and presentation at professional conferences will be considered.

References

Agency for Healthcare Research and Quality. (2017a). *Healthcare cost and utilization project.* Retrieved from https://www.hcup-us.ahrq.gov/nrdoverview.jsp

Agency for Healthcare Research and Quality. (2017b). *Ways to approach the quality improvement process.* Retrieved from https://www.ahrq.gov/cahps/quality-improvement/improvement-guide/4-approach-qi-process/index.html

American Association of Colleges of Nursing. (2006). *The essentials of doctoral education for advanced nursing practices.* Washington, DC: Author.

Breimaier, H.E., Heckemann, B., Halfens, R.J., & Lohrmann, C. (2015). The consolidated framework for implementation research (CFIR): A useful theoretical framework for guiding and evaluating a guideline implementation process in a hospital-based nursing practice. *BioMed Central Nursing, 14,* 43-51. doi 10.1186/s12912-015-0088-4

Centers for Disease Control and Prevention. (2013). *The state of health & aging in America 2013.* Washington, DC: United States Department of Health and Human Services.

Centers for Disease Control and Prevention. (2016). *Chronic diseases: The leading causes of death and disability in the U.S.* Retrieved from https://www.cdc.gov/chronicdisease/overview/

Centers for Medicare and Medicaid Services. (2014). *Affordable care act update: Implementing Medicare cost savings.* Retrieved from http://www.cms.gov/apps/docs/aca-update-implementing-medicare-costs-savings.pdf

Centers for Medicare and Medicaid. (2016). *Hospital readmissions reduction program.* Retrieved from https://www.cms.gov/medicare/medicare-fee-for-service-payment/acuteinpatientpps/readmissions-reduction-program.html

Centers for Medicare and Medicaid Services. (2017a). *Hospital compare.* Retrieved from https://www.medicare.gov/hospitalcompare/Data/Data-Updated.html#

Centers for Medicare and Medicaid Services. (2017b). *Bundled payments for care improvement initiative (BPCI): General information.* Retrieved from https://innovation.cms.gov/initiatives/bundled-payments/

Centers for Medicare and Medicaid Services. (2017c). *About the CMS Innovation Center.* Retrieved from https://innovation.cms.gov/About

Chatterjee, A., Kubendran, S., King, J., & DeVol, R. (2014). *Check up time: Chronic disease and wellness in America.* Santa Monica, CA: The Milken Institute.

Coleman, E.A., Parry, C., Chalmers, S., & Min, S.J. (2006). The care transitions intervention: Results from a randomized controlled trial. *Archives of Internal Medicine, 166,* 1822-1828.

Consolidated Framework for Implementation Research. (2014). *CFIR constructs.* Retrieved from http://www.cfirguide.org/constructs.html

Consolidated Framework for Implementation Research. (2016). *Consolidated Framework for Implementation Research.* Retrieved from http://www.cfirguide.org/index.html

Cowen, M.E., Strawderman, R.L., Czenwinski, J.L., Smith, M.J., & Halasyamani, L.K. (2012). Mortality predictions on admissions as a context for organizing care activities. *Journal of Hospital Medicine, 5,* 1-7. doi: 10.1002/jhm.1998

Damschroder, L.J., Aron, D.C., Keith, R.E., Kirsh, S.R., Alexander, J.A., & Lowery, J.C. (2009). *Fostering implementation of health services research findings into practice: A consolidated framework for advancing implementation science.* Retrieved from http://www.implementationscience.com/content/4/1/50

Englander, H., Michaels, L., Chan, B., & Kansagara, D. (2014). The care transitions innovations (C-TraIn) for socioeconomically disadvantaged adults: Results of a cluster randomized controlled trial. *Journal of General Internal Medicine, 29,* 1460-1467. doi: 10.1007/s11606-014-2903-0

Fineout-Overholt, E., Melnyk, B.M., Stillwell, S.B., & Williamson, K.M. (2010). Critical appraisal of the evidence: Part I. *American Journal of Nursing, 110*(7), 47-52.

Fingar, K., & Washington, R. (2015). *Trends in hospital readmissions for four high-volume conditions, 2009-2013, statistical brief #196.* Retrieved from https://www.hcup-us.ahrq.gov/reports/statbriefs/sb196-Readmissions-Trends-High-Volume-Conditions.jsp

Grand Valley State University. (2017). *Human research review committee.* Retrieved from http://www.gvsu.edu/hrrc/

Ha, D.T., Dang, T.Q., Tran, N.V., Pham, T.N.T., Nguyen, N.D., & Nguyen, T.V. (2017). Development and validation of a prognostic model for predicting 30-day mortality risk in medical patients in the emergency department (ED). *Scientific Reports, 7,* 1-10. doi: 10.1038/srep46474

HCAHPS. (2017). *CAHPS hospital survey*. Retrieved from http://www.hcahpsonline.org/Facts.aspx

Hines, A.L., Barrett, M.L., Jiang, H.J., & Steiner, C.A. (2014). *Conditions with the largest number of adult hospital readmissions by payer, 2011. HCUP Statistical Brief 172.* Retrieved from https://www.hcup-us.ahrq.gov/reports/statbriefs/sb172-Conditions-Readmissions-Payer.jsp

Hospital Compare. (2013). *30-day unplanned readmission and death measures.* Retrieved from http://www.medicare.gov/hospitalcompare/Data/30-day-measures.html

Im, E.O. (2011). Transitions theory: A trajectory of theoretical development in nursing. *Nursing Outlook, 59*(5), 278-285.

Im, E.O. (2014). Theory of transitions. In M.J. Smith & P.R. Liehr (Eds.), *Middle range theory for nursing* (p. 253-276). New York: Springer Publishing Company.

Institute of Medicine. (2001). *Crossing the quality chasm: A new health system for the 21st century.* Washington, DC: National Academies Press.

Jack, B.W., Chetty, V.K., Anthony, D., Greenwald, J.L., Sanchez, G.M., Johnson, A.E.,…& Culpepper, L. (2009). A reengineered hospital discharge program to decrease rehospitalization: A randomized trial. *Annuals of Internal Medicine, 150*(3), 178-187.

Jencks, S.F., Williams, M.V., & Coleman, E.A. (2009). Rehospitalizations among patients in the Medicare fee-for-service program. *New England Journal of Medicine, 360*, 1418-1428.

Jones, C.E., Hollis, R.H., Wahl, T.S., Oriel, B.S., Itani, K.M., Morris, M.S., & Hawn, M.T. (2016). Transitional care interventions and hospital readmissions in surgical populations: A systematic review. *The American Journal of Surgery, 212,* 327-335.

Kansagara, D., Englander, H., Salanitro, A., Kagen, D., Theobald, C., Freeman, M., & Kripalani, S. (2011). Risk prediction models for hospital readmission: A systematic review. *Journal of the American Medical Association, 306*(15), 1688-1698.

Kirkham, H.S., Clark, B.L., Paynter, J., Lewis, G.H., & Duncan, I. (2014). The effect of a collaborative pharmacist-hospital care transition program on the likelihood of 30-day readmission. *American Journal of Health System Pharmacology, 71,* 739-745. doi: 10.2146/ajhp130457

Koehler, B.E., Richter, K.M., Youngblood, L., Cohen, B.A., Prengler, I.D., Cheng, D., & Masica, A.L. (2009). Reduction of 30-day postdischarge hospital readmission or emergency department visit rates in high-risk elderly medical patients through delivery of a targeted care bundle. *Journal of Hospital Medicine, 4*(4), 211-218.

Lane, S. (2015). *More patients, more older adults.* Retrieved from https://www.aapa.org/pas-connect/2017/02/patients-complex-patients/

Leppin, A.L., Gionfriddo, M.R., Kessler, M., Brito, J.P., Mair, F.S., Gallacher, K.,… & Montori, V.M. (2014). Preventing 30-day hospitalization readmissions: A systematic review and meta-analysis of randomized trials. *JAMA Internal Medicine, 174,* 1095-1107. doi; 10.1001/jamainternmed.2014.1608

Li, J., Young, R., & Williams, M.V. (2014). Optimizing transitions of care to reduce rehospitalizations. *The Cleveland Clinic Journal of Medicine, 81*(5), 312-320.

Low, L.L., Tan, S.Y., Ng, M.J.M., Tay, W.Y., Ng, L.B., Balasubramaniam, K.,… & Lee, K.H. (2017). Applying the integrated practice unit concept to a modified virtual ward model of care for

patients at highest risk of readmission: A randomized controlled trial. *PLoS ONE, 12*(1), 1-18. doi:10.1371/journal.pone.0168757

Meleis, A.I., Sawyer, L.M., Im, E.O., Messias, D.K.H., & Schumacher, K. (2000). Experiencing transitions: An emerging middle-range theory. *Advanced Nursing Science, 23*(1), 12-28.

National Institute for Healthcare Management. (2012). *The concentration of healthcare spending.* Retrieved from http://www.nihcm.org/pdf/DataBrief3%20Final.pdf

Orthoff, J.R., Velkhoff, V.A., and Hogan, H. (2014). *An aging nation: The older adult in the United States*. Washington, DC: United States Census Bureau.

Rau, J. (2016). *Medicare's readmission penalties hit new high.* Retrieved from http://khn.org/news/more-than-half-of-hospitals-to-be-penalized-for-excess-readmissions/

Robinson, S., Howie-Esquivel, J., Vlahov, D. (2012). Readmission risk factors after hospital discharge among the elderly. *Population Health Management, 15*(6), 338-351. doi:10.1089/pop.2011.0095

Scoville, R., & Little, K. (2014). *Comparing LEAN and quality improvement. Institute for Healthcare Improvement white paper*. Cambridge, MA: Institute for Healthcare Improvement.

Six Sigma. (2014). *Avoiding a six sigma project failure.* Retrieved from http://www.sixsigmadaily.com/avoiding-failed-six-sigma-projects/

Smith, M.J., & Liehr, P.R. (2014). *Middle range theory for nursing.* New York: Springer Publishing Company.

Steiner, C. (2015). *New AHRQ database tracks hospital readmission rates.* Retrieved from https://www.ahrq.gov/news/blog/ahrqviews/112015.html

The Advisory Board Company. (2016). *CMS will withhold more than $500 million in payments under its readmissions reduction program.* Retrieved from https://www.advisory.com/daily-briefing/2016/08/04/hospitals-facing-readmission-penalties

Tremblay, D., Arnsten, J.H., & Southern, W.N. (2016). A simple and powerful risk-adjustment tool for 30-day mortality among inpatients. *Quality Management in Healthcare, 25*(3), 123-130.

Trinity Health. (2016). *PRISM application manual.* Livonia, MI: Author.

United State Census Bureau. (2012). *U.S. census bureau projections show a slower growing, older, more diverse nation a half century from now.* Retrieved from https://www.census.gov/newsroom/releases/archives/population/cb12-243.htm

Vedel, I., & Khanassov, V. (2015). Transitional care for patients with congestive heart failure: A systematic review and meta-analysis. *Annals of Family Medicine, 13,* 562-571.

Verhaegh, K.J., MacNeil-Vroomen, J.L., Estami, S., Geerlings, S.E., de Rooij, S.E., & Buurman, B.M. (2014). Transitional care interventions: Prevent hospital readmissions for adults with chronic illness. *Health Affairs, 33,* 1531-1539.

Appendix A

Table 1. Summary of the articles for the integrative literature review.

Author, Year	Title	Setting	Population	Design and Theoretical Model	Sample Size	Intervention and/or measurements	Statistical Analyses	Major findings	Limitations	Evidence Grade*
Coleman, Parry, Chalmers, & Min (2006)	The Care Transitions Intervention	Large integrated healthcare system in Colorado	Adults 65 years of age and older with complex care needs	Randomized Controlled Trial; no theoretical model identified	N = 750	Intervention patients received tools to promote cross-site communication and encouragement to take a more active role in and assertion of their preferences. Measurements included chronic disease score, rate of non-elective rehospitalization, and rate of rehospitalization for same condition that prompted index hospitalization.	Wilcoxon rank sum test for nonnormally distributed continuous variables, Fisher exact test for dichotomous variables, chi-square for dichotomous outcomes	Intervention patients had lower rehospitalization rates at 30 and 90 days, lower rehospitalization rates for the same condition that precipitated hospitalization at 90 days, and lower mean hospital costs at 180 days	Formal cost of analysis is beyond the scope of this study. This study did not take into account how care interventions could be implemented under Medicare Advantage payment structures	Level II
Englander, Michaels, Chan, & Kansagara (2014)	The Care Transitions Innovation (C-TraIn) for Socioeconomically Disadvantaged Adults: Results of a Cluster Randomized Controlled Trial	Single urban academic medical center in Portland, Oregon	Low-income adults	Randomized Controlled Trial; no theoretical model identified	N= 382	The Care Transitions Innovation (C-TraIn) was delivered early in hospitalization and continued through 30 days post-discharge. Measurement outcomes were 30-day readmission rate and ED use, mortality, and transitional care quality.	Bivariate comparisons using chi-square and t-tests; generalized linear mixed models for binomial outcomes	C-TraIn was associated with improved transitional care quality and reduced mortality, but did not reduce 30-day readmission rates or ED visits.	Single center study limited generalizability; small number of participants; transitional care nurse and pharmacist may have absorbed work typically done by social worker, allowing more time to coordinate care; limited to English speaking patients	Level II
Jack, Chetty, Anthony, Greenwald, Sanchez, Johnson, Forsythe, O'Donnell, Paasche-Orlow, Manasseh, Martin, & Culpepper (2009)	A Reengineered Hospital Discharge Program to Decrease Rehospitalization: A Randomized Trial	General medical service at an urban academic hospital	English speaking hospitalized adults	Randomized Controlled Trial; no theoretical model identified	N = 749	A nurse discharge advocate worked with patients during the hospital stay to provide specific interventions. Measurement outcomes were ED visits and hospitalizations within 30 days of discharge.	Poisson test and proportions test for significance; sensitivity analysis to exclude outliers	Participants in the intervention group had significantly lower hospital utilization; most effective within 6 months of index admission.	Single center study; not all potential eligible patients could be enrolled; outcome assessment relied upon participant report.	Level II
Jones, Hollis, Wahl, Oriel, Itani, Morris, & Hawn (2016)	Transitional Care Interventions and Hospital Readmissions in Surgical Populations: A Systematic Review	Database search of PubMed	Adults 18 years of age and older admitted for surgical procedure	Systematic Review; no theoretical model identified	N = 10	Transitional care interventions following surgery; any intervention designed to improve post-op care after discharge; this included patient education, case management, and discharge planning.	Level of significance set at alpha value of .05; univariate and bivariate statistics reported within each study	Of 4 studies on coordinated discharge planning, 3 demonstrated significant reduction of 30-day readmission rates. 2 studies focused on patient education; both showed statistically significant reduction in readmissions.	Heterogeneity limited meaningful meta-analysis; only 3 of the 10 studies analyzed were RCTs, which weakened overall evidence. 30-day readmissions varied on whether time from discharge began from day of surgery or day of discharge.	Level I

Author, Year	Title	Setting	Population	Design and	Sampl	Intervention and/or	Statistical Analyses	Major findings	Limitations	Evidence
Koehler, Richter, Youngblood, Cohen, Prengler, Cheng, & Masica (2009)	Reduction of 30-Day Post-Discharge Hospital Readmissions or Emergency Department (ED) Visit Rates in High-Risk Elderly Medical Patients Through Delivery of a Targeted Care Bundle	900-bed Baylor Medical Center in Dallas, TX	Adults age 70 and older admitted to either an Inpatient Care Unit or Texas Primary Care	Randomized Controlled Trial Pilot Study; no theoretical model identified	N = 41	Intervention group care bundle comprised of medication counseling/reconciliation by a clinical pharmacist, diagnoses-specific education and enhanced discharge planning by a care coordinator, and phone follow-up. Measurement outcomes included length of stay, illness severity, unplanned hospital admission, and ED visitation at 30, 60, and 90 days post-discharge.	Student t-tests to compare continuous variables between groups; differences compared using Fisher exact tests; log-rank test for to to readmission events	No statistical significance was found between control and intervention groups for index LOS. Readmission and ED visits were significant at 30 days, but no longer present at 60 days.	Pilot study had small sample size and was not adequately powered to detect an influence on LOS. Incomplete blinding may have affected results. Use of only 3 care coordinators and 3 pharmacists, and were chosen based on experience and interest in the area of care transitions.	Level II
Leppin, Gionfriddo, Kessler, Brito, Mair, Gallacher, Wang, Erwin, Sylvester, Boehmer, Ting, Murad, Shippee, & Montori (2014)	Preventing 30-Day Hospital Readmissions: A Systematic Review and Meta-analysis of Randomized Trials	Database search of PubMed, Ovid MEDLINE, Ovid EMBASE, EBSCO CINAHL, and Scopus	Adult patients admitted to an inpatient ward for at least 24 hours	Systematic Review; cumulative complexity framework that conceptualizes patient context as a balance between workload and capacity.	N = 47	Intervention criteria had to focus on efforts on hospital-to-home transition, allow patients to have similar inpatient experiences, and be generalizable to contexts beyond a single diagnosis. Measurements included unplanned readmissions up to 30-days post-discharge and out-of-hospital deaths.	Random-effect meta-analyses to estimate pooled risk ratios and 95% confidence intervals; Cochroan Q $\chi 2$ to test heterogeneity of effect on outcome	The tested interventions were significant at preventing early readmissions; more complex interventions have greater significance. Trials published before 2002 were more effective.	Many of the studies analyzed were conducted at single centers. The scale used to evaluate intervention effects on patient workload and capacity were not yet validated.	Level I
Vedel & Khanassov (2015)	Transitional Care for Patients with Congestive Heart Failure: A Systematic Review and Meta-Analysis	Database search of MEDLINE, PsycInfo, EMBASE, and Cochrane Library	Adult patients admitted to acute health service for CHF	Systematic Review; no theoretical model identified	N = 41	Trials analyzed had to compare some form of transitional care with usual care. Authors developed a taxonomy of interventions. Measurements included the all-cause readmission rates and all-cause ED visit rates.	Relative risks and 95% confidence intervals were used to calculate mean effect size	Transitional care significantly reduced outcome measures; high-intensity TCI reduced readmissions regardless of follow up duration.	Only English and French languages were included in this review due to resource constraints. Patient characteristics were missing in some studies. Studies on the "oldest old" were lacking, who represent the fast-growing segment of the population.	Level I
Verhaegh, MacNeill-Vroomen, Eslami, Geerlings, de Rooij, & Buurman (2014)	Transitional Care Interventions Prevent Hospital Readmissions for Adults with Chronic Illnesses	Database search of PubMed, MEDLINE, EMBASE, Cochrane Library, and CINAHL	Adult chronically ill patients experiencing one or more readmissions	Systematic Review; no theoretical model identified	N = 26	Transitional bundle of care interventions at varying levels of intensity were reviewed. Measurements included all-cause readmission rates at up to 30 days, 31-180 days, and 181-365 days post-discharge.	Alpha value of .05; for dichotomous outcomes odds ratio, absolute risk reduction, and 95% CI used	High-intensity TCIs were significant in reducing short-term readmissions. TCI was most effective for adults older than 60 and admitted to general medical units.	Readmission was defined as all-cause; complex diagnoses and patient age may have greater influence on short, medium, and long-term readmission rates.	Level I

* Evidence levels assigned according to Melnyk's Levels of Evidence

Appendix B

Table 2. Melnyk's Level of Evidence.

Type of evidence	Level of evidence	Description
Systematic review or meta-analysis	I	A synthesis of evidence from all relevant randomized controlled trials.
Randomized controlled trial	II	An experiment in which subjects are randomized to a treatment group or control group.
Controlled trial without randomization	III	An experiment in which subjects are nonrandomly assigned to a treatment group or control group.
Case-control or cohort study	IV	Case-control study: a comparison of subjects with a condition (case) with those who don't have the condition (control) to determine characteristics that might predict the condition. Cohort study: an observation of a group(s) (cohort[s]) to determine the development of an outcome(s) such as a disease.
Systematic review of qualitative or descriptive studies	V	A synthesis of evidence from qualitative or descriptive studies to answer a clinical question.
Qualitative or descriptive study	VI	Qualitative study: gathers data on human behavior to understand *why* and *how* decisions are made. Descriptive study: provides background information on the *what*, *where*, and *when* of a topic of interest.
Expert opinion or consensus	VII	Authoritative opinion of expert committee.

(Fineout-Overholt et al., 2010)

Note: Reprinted with permission (Appendix M)

Appendix C

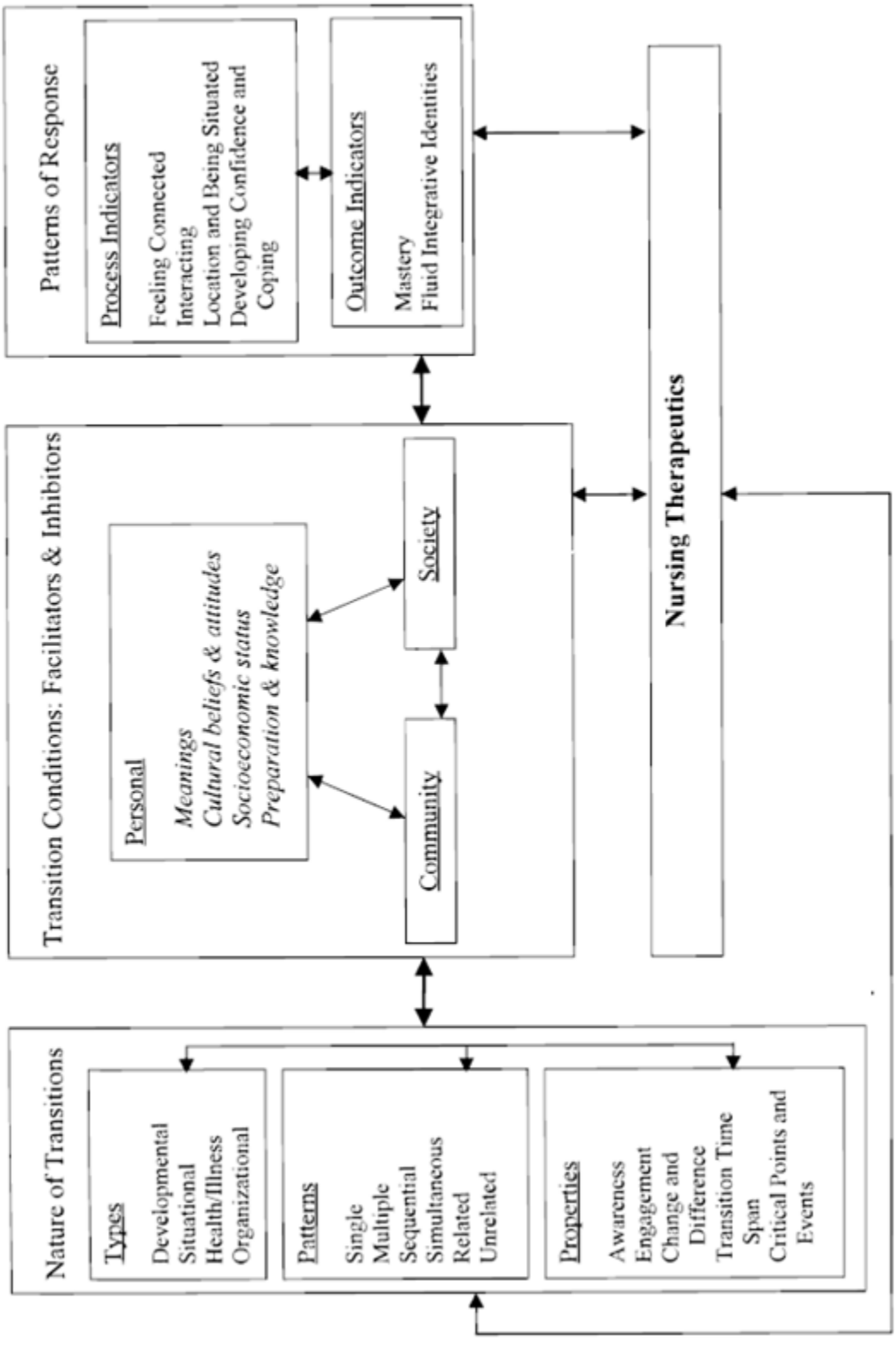

Figure 1. Meleis' Middle Range Theory of Transitions

Note: Reprinted with permission (Appendix N)

Appendix D

Construct		Short Description
I. INTERVENTION CHARACTERISTICS		
A.	Intervention Source	Perception of key stakeholders about whether the intervention is externally or internally developed.
B.	Evidence Strength & Quality	Stakeholders' perceptions of the quality and validity of evidence supporting the belief that the intervention will have desired outcomes.
C.	Relative Advantage	Stakeholders' perception of the advantage of implementing the intervention versus an alternative solution.
D.	Adaptability	The degree to which an intervention can be adapted, tailored, refined, or reinvented to meet local needs.
E.	Trialability	The ability to test the intervention on a small scale in the organization, and to be able to reverse course (undo implementation) if warranted.
F.	Complexity	Perceived difficulty of implementation, reflected by duration, scope, radicalness, disruptiveness, centrality, and intricacy and number of steps required to implement.
G.	Design Quality & Packaging	Perceived excellence in how the intervention is bundled, presented, and assembled.
H.	Cost	Costs of the intervention and costs associated with implementing the intervention including investment, supply, and opportunity costs.
II. OUTER SETTING		
A.	Patient Needs & Resources	The extent to which patient needs, as well as barriers and facilitators to meet those needs, are accurately known and prioritized by the organization.
B.	Cosmopolitanism	The degree to which an organization is networked with other external organizations.
C.	Peer Pressure	Mimetic or competitive pressure to implement an intervention; typically because most or other key peer or competing organizations have already implemented or are in a bid for a competitive edge.
D.	External Policy & Incentives	A broad construct that includes external strategies to spread interventions, including policy and regulations (governmental or other central entity), external mandates, recommendations and guidelines, pay-for-performance, collaboratives, and public or benchmark reporting.

Figure 2. Consolidated Framework for Implementation Research five domains, 26 constructs and 13 subconstructs (CFIR, 2014).

Note: Reprinted with permission (Appendix O).

A typographical error is found in the above figure. Domain V, Process, is incorrectly labeled as Domain IV.

III. INNER SETTING		
A.	Structural Characteristics	The social architecture, age, maturity, and size of an organization.
B.	Networks & Communications	The nature and quality of webs of social networks and the nature and quality of formal and informal communications within an organization.
C.	Culture	Norms, values, and basic assumptions of a given organization.
D.	Implementation Climate	The absorptive capacity for change, shared receptivity of involved individuals to an intervention, and the extent to which use of that intervention will be rewarded, supported, and expected within their organization.
1.	Tension for Change	The degree to which stakeholders perceive the current situation as intolerable or needing change.
2.	Compatability	The degree of tangible fit between meaning and values attached to the intervention by involved individuals, how those align with individuals' own norms, values, and perceived risks and needs, and how the intervention fits with existing workflows and systems.
3.	Relative Priority	Individuals' shared perception of the importance of the implementation within the organization.
4.	Organizational Incentives & Rewards	Extrinsic incentives such as goal-sharing awards, performance reviews, promotions, and raises in salary, and less tangible incentives such as increased stature or respect.
5.	Goals & Feedback	The degree to which goals are clearly communicated, acted upon, and fed back to staff, and alignment of that feedback with goals.
6.	Learning Climate	A climate in which: a) leaders express their own fallibility and need for team members' assistance and input; b) team members feel that they are essential, valued, and knowledgeable partners in the change process; c) individuals feel psychologically safe to try new methods; and d) there is sufficient time and space for reflective thinking and evaluation.
E.	Readiness for Implementation	Tangible and immediate indicators of organizational commitment to its decision to implement an intervention.
1.	Leadership Engagement	Commitment, involvement, and accountability of leaders and managers with the implementation.
2.	Available Resources	The level of resources dedicated for implementation and on-going operations, including money, training, education, physical space, and time.
3.	Access to Knowledge & Information	Ease of access to digestible information and knowledge about the intervention and how to incorporate it into work tasks.

IV. CHARACTERISTICS OF INDIVIDUALS		
A.	Knowledge & Beliefs about the Intervention	Individuals' attitudes toward and value placed on the intervention as well as familiarity with facts, truths, and principles related to the intervention.
B.	Self-efficacy	Individual belief in their own capabilities to execute courses of action to achieve implementation goals.
C.	Individual Stage of Change	Characterization of the phase an individual is in, as he or she progresses toward skilled, enthusiastic, and sustained use of the intervention.
D.	Individual Identification with Organization	A broad construct related to how individuals perceive the organization, and their relationship and degree of commitment with that organization.
E.	Other Personal Attributes	A broad construct to include other personal traits such as tolerance of ambiguity, intellectual ability, motivation, values, competence, capacity, and learning style.

Figure 2. Consolidated Framework for Implementation Research five domains, 26 constructs and 13 subconstructs (CFIR, 2014).

Note: Reprinted with permission (Appendix O).

A typographical error is found in the above figure. Domain V, Process, is incorrectly labeled as Domain IV.

IV. PROCESS		
A.	Planning	The degree to which a scheme or method of behavior and tasks for implementing an intervention are developed in advance, and the quality of those schemes or methods.
B.	Engaging	Attracting and involving appropriate individuals in the implementation and use of the intervention through a combined strategy of social marketing, education, role modeling, training, and other similar activities.
1.	Opinion Leaders	Individuals in an organization who have formal or informal influence on the attitudes and beliefs of their colleagues with respect to implementing the intervention.
2.	Formally Appointed Internal Implementation Leaders	Individuals from within the organization who have been formally appointed with responsibility for implementing an intervention as coordinator, project manager, team leader, or other similar role.
3.	Champions	Individuals who dedicate themselves to supporting, marketing, and 'driving through' an implementation, overcoming indifference or resistance that the intervention may provoke in an organization.
4.	External Change Agents	Individuals who are affiliated with an outside entity who formally influence or facilitate intervention decisions in a desirable direction.
C.	Executing	Carrying out or accomplishing the implementation according to plan.
D.	Reflecting & Evaluating	Quantitative and qualitative feedback about the progress and quality of implementation accompanied with regular personal and team debriefing about progress and experience.

Figure 2. Consolidated Framework for Implementation Research five domains, 26 constructs and 13 subconstructs (CFIR, 2014).

Note: Reprinted with permission (Appendix O).

A typographical error is found in the above figure. Domain V, Process, is incorrectly labeled as Domain IV.

Appendix E

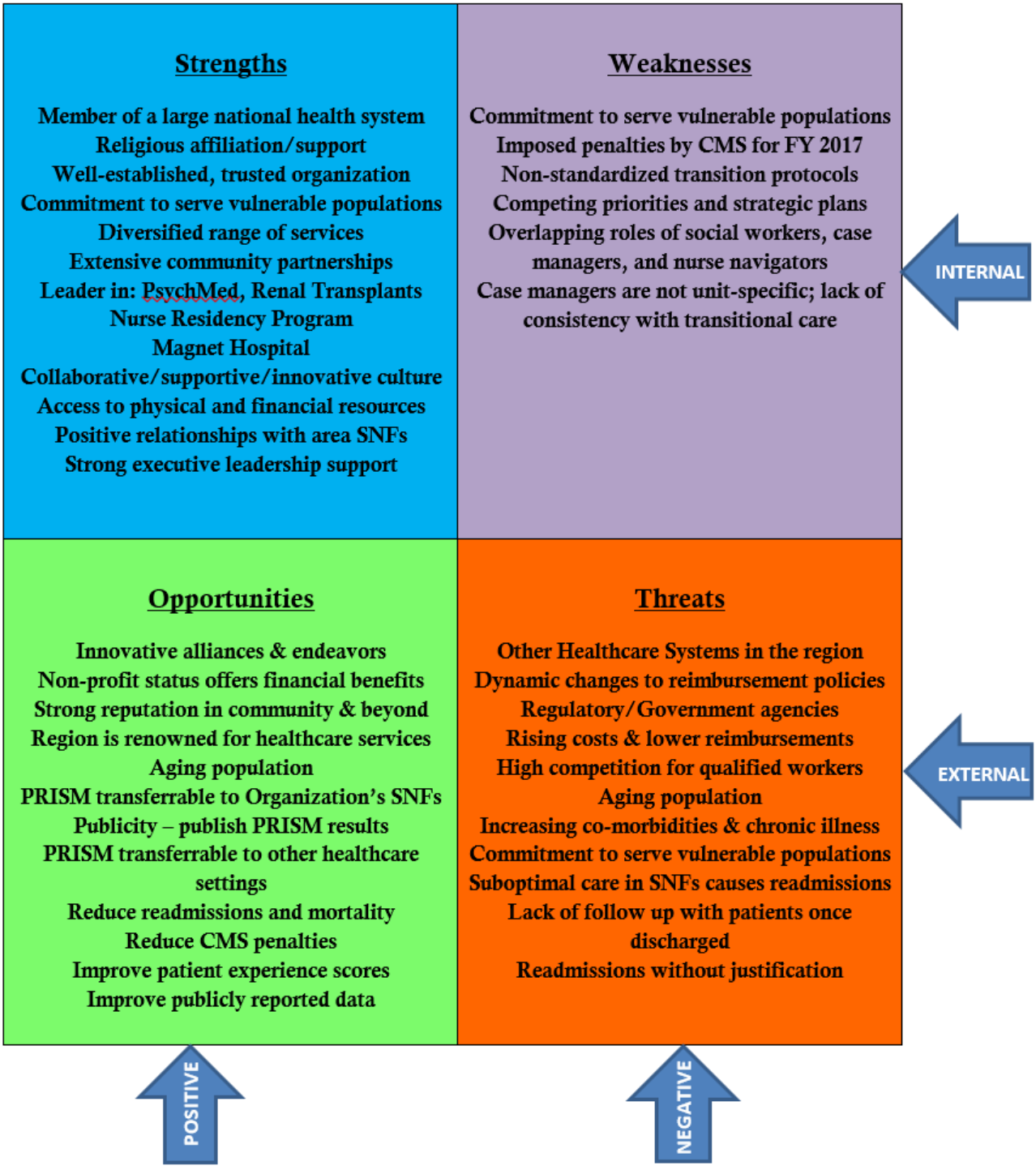

Figure 3. SWOT Analysis: CBH

Appendix F

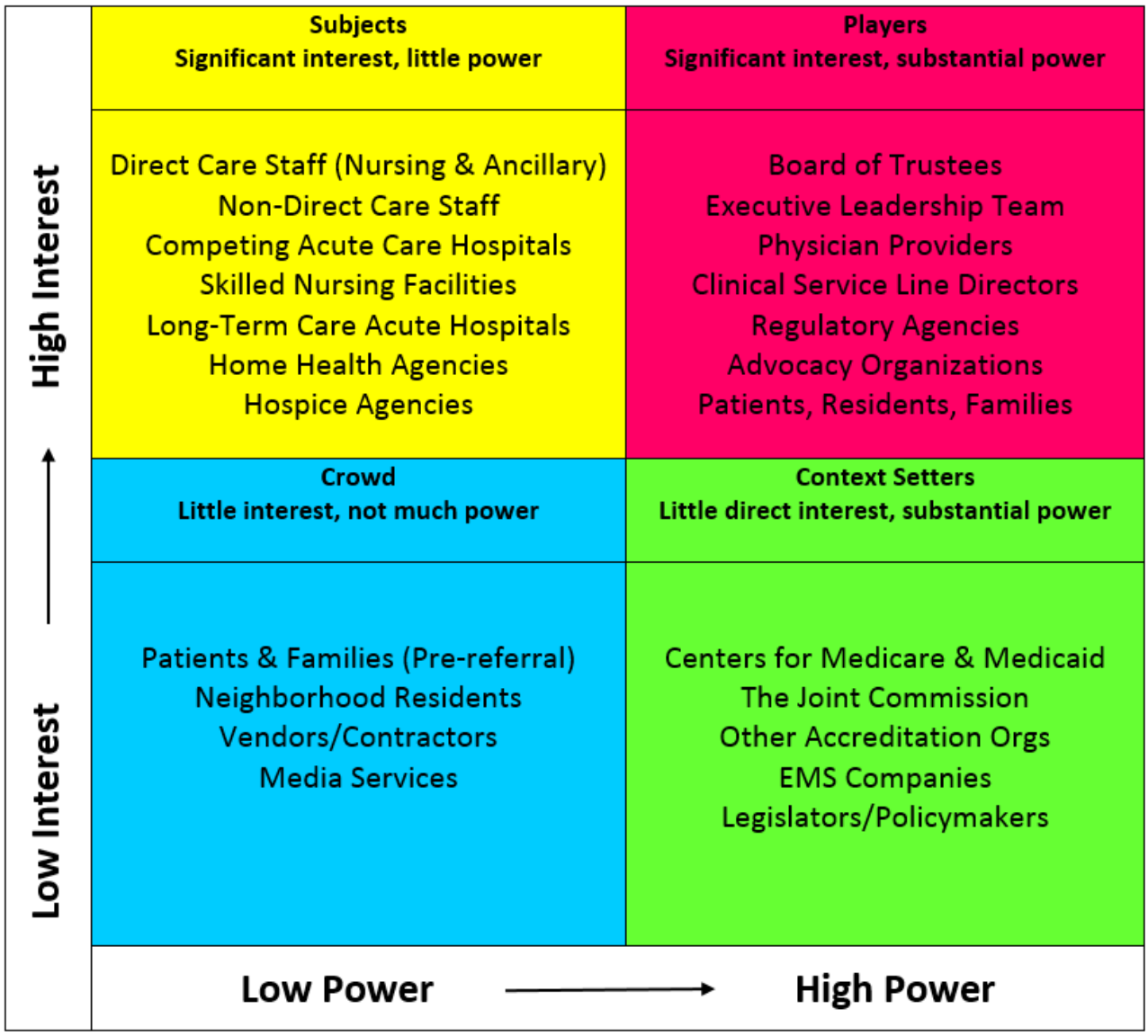

Figure 4. Stakeholder Analysis: CBH

Appendix G

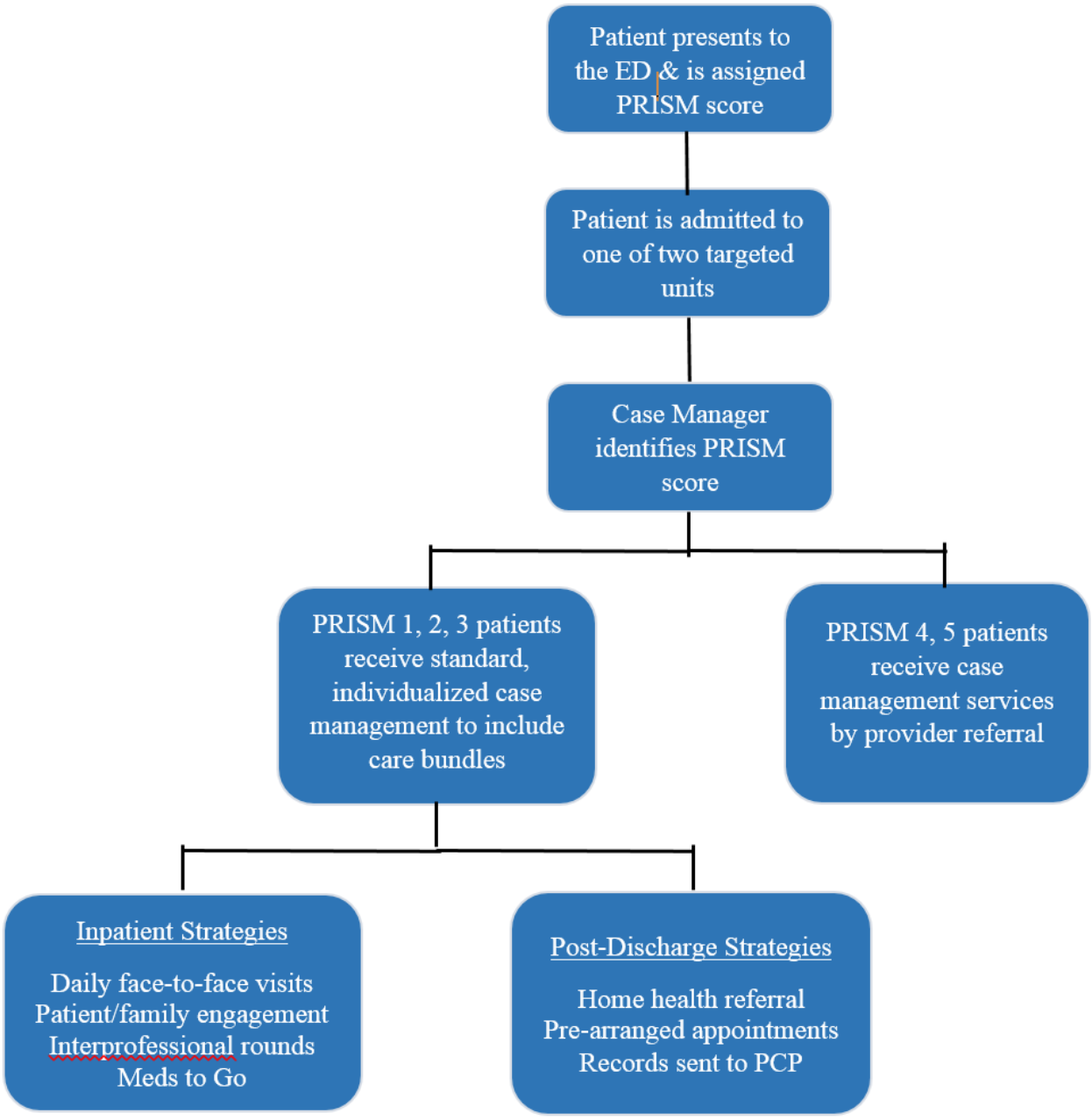

Figure 5. Project design: Implementation of the PRISM Mortality Risk Tool and standardized case management protocol at CBH

Appendix H

	CFIR Construct	Project Implementation Steps	Timeline (Complete by)
Pre-Implementation	**Planning**	1. Project approval by GVSU & MHSM IRBs 2. Final approval of proposal by Project Advisor and team 3. Project defense and approval by project team 4. Project planning meetings with DNP Performance Improvement Coordinator (PIC)	1. July 30, 2017 2. July 28, 2017 3. July 31, 2017 4. July 31, 2017
	Engaging	1. Project planning meetings with PIC, Dir. of Prof. Practice & Dev., Med. Dir. of Quality, Dir. of Quality/Case Management, and Case Management Manager 2. Administer informal survey to case managers 3. Education of case managers and convene Case Management Task Force 4. Case Management Task Force completes redesign of workflow 5. Provide case managers with written case management protocol 6. 1:1 meetings with case managers to review new process, answer questions, address concerns	1. Aug 15, 2017 2. July 11, 2017 3. July 11, 2017 4. Aug 15, 2017 5. Aug 22, 2017 6. Aug 31, 2017
Implementation	**Engaging & Executing**	1. Kick-off new case management protocol 2. Weekly 1:1 check-ins with case managers 3. Project update meetings with DNP Performance Improvement Coordinator (PIC) 4. Project update meetings with PIC, Dir. of Prof. Practice & Dev., Med. Dir. of Quality, Dir. of Quality/Case Management, and Case Management Manager 5. Project update meetings with Case Management Task Force 6. Data collection and preliminary analyses	1. Sept 4, 2017 2. Nov 6, 2017 3. Nov 30, 2017 4. Nov 30, 2017 5. Nov 30, 2017 6. Oct 30, 2017
Post-Implementation	**Reflecting & Evaluating**	1. Final data collection, evaluation, and analyses 2. Dissemination of results to PIC, Dir. of Prof. Practice & Dev., Med. Dir. of Quality, Dir. of Quality/Case Management, and Case Management Manager; present recommendations for further change 3. Dissemination of results to case managers 4. Completion of final project written report 5. Presentation of final project written report 6. Submit project to ScholarWorks	1. Nov 30, 2017 2. Dec 8, 2017 3. Dec 8, 2017 4. Dec 8, 2017 5. Dec 15, 2017 6. Dec 15, 2017

Figure 6. Project steps and timeline: Implementation of the PRISM Mortality Risk Tool and standardized case management protocol at CBH

Appendix I

MERCY HEALTH

June 23, 2017

Mary K. Ziomkowski
3657 Kinnrow Court NW
Walker, MI 49534

RE: Agreement Regarding Private, Coded Human Subject Information

Dear Ms. Ziomkowski,

This letter will serve as an agreement for the prohibition of release of the key to coded private information to the investigator of the DNP project. Under no circumstances shall the holder of this key release the key to the investigator for the protection of individual coded private information. Throughout the project titled "Implementation of a Standardized, Person-Centered Case Management Protocol Using the PRISM Mortality Risk Tool to Decrease 30-Day Readmission Rates for High Risk Patients Admitted Through the Emergency Department at a Community Based Hospital," coded private information shared in the form data with you, as DNP student, shall maintain the privacy of each individual.

Regards,

Colleen Chase RN

Colleen Chase, RN
Performance Improvement Coordinator
Clinical Quality Management
616-685-6571
Mercy Health Saint Mary's
200 Jefferson SE
Grand Rapids, MI 49503
chasec@mercyhealth.com

Appendix J

MERCY HEALTH

June 23, 2017

Mary K. Ziomkowski
3657 Kinnrow Court NW
Walker, MI 49534

RE: Letter of Permission to Participate in DNP Scholarly Project

Dear Ms. Ziomkowski,

This letter will serve as permission for you to participate in a DNP Scholarly Project in collaboration with Mercy Health Saint Mary's in Grand Rapids, Michigan. I will serve as your preceptor and liaison here at the organization throughout the practicum and project process. In addition, you must submit your proposed project to the Mercy Health Saint Mary's Institutional Review Board (IRB) for approval prior to initiation of your project.

Your project, titled "Implementation of a Standardized, Person-Centered Case Management Protocol Using the PRISM Mortality Risk Tool to Decrease 30-Day Readmission Rates for High Risk Patients Admitted Through the Emergency Department at a Community Based Hospital," will be conducted as part of the PRISM innovation. Your project will run in tandem with initiatives involving the Emergency Department, Palliative Care, and Case Management teams, and will require planning, implementation, evaluation, and possible re-implementation.

I look forward to working with you over the course of next few months, and assisting you with the IRB process. Please continue to let me know how I can be of help and support.

Regards,

Kristin Todd

Kristine Todd, DNP, FNP-BC, RN-BC
Director of Professional Practice and Development
Mercy Health Saint Mary's
200 Jefferson Avenue SE
Grand Rapids, MI 49503
(616) 685-6637
toddkm@mercyhealth.com

Appendix K

MERCY HEALTH

CASE MANAGER INFORMAL SURVEY
Pre- and Post-Implementation of New Protocol
RN Case Management of PRISM 1, 2, 3 Patients

1. The patient's PRISM score is easily identifiable in the electronic health record.

1	2	3	4	5
Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree

2. I use the patient's PRISM score to prioritize my daily caseload visits.

1	2	3	4	5
Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree

3. I see all PRISM 1, 2, and 3 patients on my caseload for a face-to-face visit daily.

1	2	3	4	5
Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree

4. Based on my current job responsibilities, caseload, and workflow, I am able to have face-to-face time with PRISM 1, 2, and 3 patients.

1	2	3	4	5
Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree

5. I believe that daily face-to-face time with patients and families is important to improve the case management process.

1	2	3	4	5
Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree

Appendix L

MERCY HEALTH

CASE MANAGER FORMATIVE ASSESSMENT TOOL
Implementation Phase of New Protocol
RN Case Management of PRISM 1, 2, 3 Patients

1. Describe how the new case management protocol has changed how you prioritize your caseload.

2. Describe how the new case management protocol has change your daily workflow.

3. What barriers have you encountered using the new case management protocol?

4. What are the facilitators that enhance this new case management protocol?

5. Has the new protocol improved satisfaction with your case management role? Why or why not?

Appendix M

Wolters Kluwer

Thank you for your order!

Dear Mary Ziomkowski, MEd, BSN,

Thank you for placing your order through Copyright Clearance Center's RightsLink® service.

Order Summary

Licensee:	Mary Ziomkowski, MEd, BSN
Order Date:	Jun 5, 2017
Order Number:	4122771124057
Publication:	AJN: American Journal of Nursing
Title:	Evidence-Based Practice Step by Step: Critical Appraisal of the Evidence: Part I
Type of Use:	Dissertation/Thesis
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Sincerely,

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Appendix N

Thank you for your order with RightsLink / Wolters Kluwer Health, Inc.

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To: Mary Ziomkowski

Saturday, July 01, 2017 9:49 PM

Wolters Kluwer

Thank you for your order!

Dear Mary Ziomkowski, MEd, BSN,

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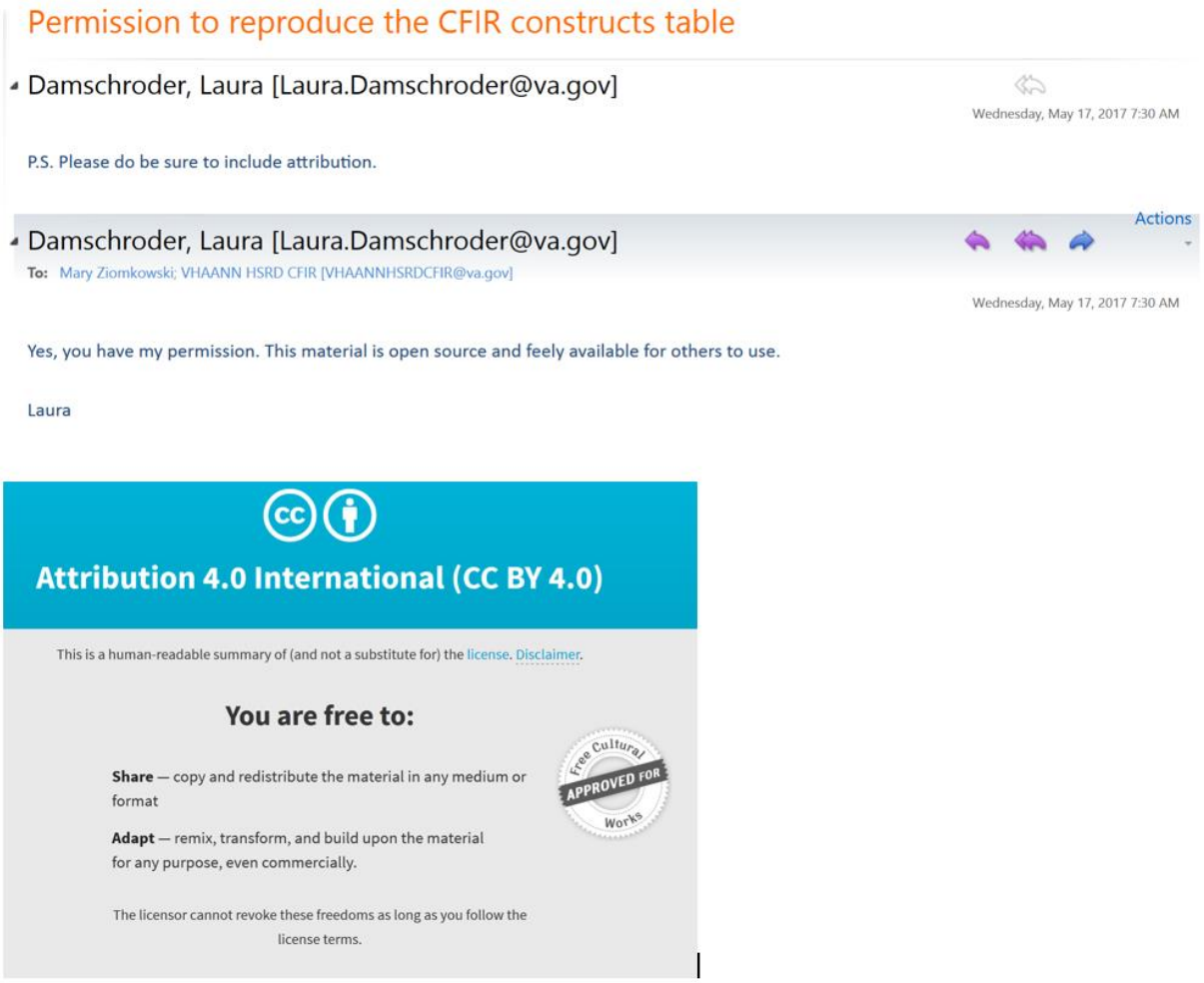
Appendix O



Permission to reproduce the CFIR constructs table

Damschroder, Laura [Laura.Damschroder@va.gov]

Wednesday, May 17, 2017 7:30 AM

P.S. Please do be sure to include attribution.

Actions

Damschroder, Laura [Laura.Damschroder@va.gov]

To: Mary Ziomkowski; VHAANN HSRD CFIR [VHAANNHSRDCFIR@va.gov]

Wednesday, May 17, 2017 7:30 AM

Yes, you have my permission. This material is open source and feely available for others to use.

Laura

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Appendix P

GRAND VALLEY STATE UNIVERSITY
www.gvsu.edu

DATE:	July 5, 2017
TO:	Jean Barry
FROM:	Grand Valley State University Human Research Review Committee
STUDY TITLE:	[1092068-1] Evaluation of a Standardized, Person-Centered Case Management Protocol Using the PRISM Mortality Risk Tool to Decrease 30-Day Readmission Rates for High Risk Patients Admitted Through the Emergency Department at a Community Based Hospital.
REFERENCE #:	18-002-H
SUBMISSION TYPE:	New Project
ACTION:	NOT RESEARCH
EFFECTIVE DATE:	July 5, 2017
REVIEW TYPE:	Administrative Review

Thank you for your submission of materials for your planned research study. Upon review of the aims and description of your study, it has been determined that this project *DOES NOT* meet the definition of covered human subjects research* according to current federal regulations. The project, therefore, *DOES NOT* require further review and approval by the HRRC.

According to your study description, you are conducting *a scholarly project to evaluate the effectiveness in reducing readmission within 30 days of discharge for patients with complex healthcare needs by providing individualized care managed by an RN case manager using specific care procedures, as determined by mortality risk prediction score of PRISM 1,2,3 assigned in the emergency department. The project has been designed as a scholarly project and not to contribute to generalizable knowledge. Therefore, it does not meet the definition of research according to the federal regulations.45 CFR 46.102 (d), states that "research is a systematic investigation, including research development, testing and evaluation,* ***designed to develop or contribute to generalizable knowledge".***

Should you change the aims and activities of your project such that it would then meet the definition of human subjects research, please cease any contacts with potential human subjects until such time as you submit the project protocol to the HRRC and receive the committee's approval to proceed. Should you change the aims and activities of your project such that you are unsure if it meets the definition of human subjects research, please submit a new Non-Human Research Determination Form for review by the Office of Research Compliance and Integrity.

If you have any questions, please contact the Office of Research Integrity and Compliance at (616) 331-3197 or rci@gvsu.edu. Please include your study title and reference number in all correspondence with our office.

Appendix Q

MERCY HEALTH

MercyHealth.com

NOTICE OF CLINICAL QUALITY IMPROVEMENT MEASUREMENT DESIGNATION

To: Kristy Todd, DNP, FNP-BC, RN-BC
200 Jefferson Avenue, SE
Grand Rapids, MI 49503

Re: IRB# 17-0710-1
Implementation of the PRISM Mortality Risk Tool and Standardized Case Management Protocol to Decrease 30-Day Readmission Rates for High Risk Patients

Date: 07/17/2017

This is to inform you that the Mercy Health Regional Institutional Review Board (IRB) has reviewed your proposed research project entitled *"Implementation of the PRISM Mortality Risk Tool and Standardized Case Management Protocol to Decrease 30-Day Readmission Rates for High Risk Patients.* The IRB has determined that your proposed project is not considered human subjects research. The purpose and objective of the proposed project meets the definition of a clinical quality improvement measurement. All publications referring to the proposed project should include the following statement:
"This project was undertaken as a Clinical Quality Improvement Initiative at Mercy Health and, as such, was not formally supervised by the Mercy Health Regional Institutional Review Board per their policies."

The IRB requests careful consideration of all future activities using the data that has been proposed to be collected and used "in order to decrease 30-day readmission rates for high risk patients and improve caseload management and workflow efficiency."

The IRB requests resubmission of the proposed project if there is a change in the current clinical quality improvement measurement design that includes testing hypothesis, asking a research question, following a research design or involves overriding standard clinical decision making and care.

Please feel free to contact me if you have any questions regarding this matter.

Brenda Hoffman

Brenda Hoffman, CIM
IRB Chairperson

Copy: File

Appendix R

Project Timeline: Actual	
Date	**Subject**
2/08/17	DNP Preceptorship meeting with Site ProjectTeam Member (SPTM), DNP & Project Advisor
3/17/17	Introductory meeting with GVSU Project Team Member to secure her placement on my project team. Meeting with SPTM to review project emphasis and formulate plan for immersion.
3/28/17	Met with SPTM and PIC to review current PRISM scoring data
4/19/17	PRISM meeting with SPTM, PIC, Medical Director of Quality (MDQ); Met with PIC to discuss case mgt plan
5/04/17	Met w/PIC re: case management project
5/17/17	Strategy meeting with PIC, Director of Quality, Manager of Case Management, and DNP student
5/18/17	DNP student performs Gemba analysis with case manager on Gerontology
5/26/17	PRISM meeting w/SPTM, PIC, MDQ
6/05/17	Project progress meeting with Project Advisor and SPTM; lunch meeting with SPTM
6/07/17	DNP student performs Gemba analysis with case manager on ICU
6/15/17	DNP student performs Gemba analysis on gerontoloty with Transition Coordinator. Met with PIC to discuss plan and strategy for palliative care and case management of PRISM 1 patients
6/20/17	Meeting w/Palliative Care Nurse Coordinator to discuss seeing PRISM patients; 1:1 mtg w/PIC to strategize for mtg w/MDQ
6/22/17	Shadowed CM on ICU for case management Gemba
6/23/17	Creation of case management bundles with PIC, Medical Director of Quality, and DNP student
6/26/17	Strategy meeting with PIC, Manager of Case Management, and DNP student
7/11/17	Presentation of PRISM tool/rationale to case managers by PIC and Medical Director of Quality
7/17/17	Meeting with PIC to map out CM workflow and bundles. Manager of Case Management proposes “Experiment 2”
7/20/17	Strategy meeting with PIC and DNP student; Director of Professional Practice met with Director of Quality to push forward with case management use of PRISM and bundle
7/26/17	Phone conference with Director of Professional Practice, PIC and DNP student to discuss next steps
8/10/17	PIC and Director of Quality met to discuss next steps and forward movement; agreed to begin project on gerontology and ICU
8/17/17	Director of Professional Practice, PIC, and Medical Director of Quality determine that project should include Transition Coordinators
9/20/17	Project meeting with Project Advisor and SPTM. Director of Professional Practice, PIC, and Manager of Case Management met to discuss feasibility of case management project. Director of Professional Practice spoke with Director of Quality; Director of Quality now wants project to occur only on

	ICU and Neuroscience units
9/26/17	DNP student and PIC perform Gemba analysis with case manager 1 on neuro
10/02/17	DNP student and PIC perform Gemba analyses with case managers on ICU and neuro
10/06/17	DNP student and PIC perform Gemba analyses with case managers on ICU and neuro
10/07/17	DNP student and PIC perform Gemba analyses with case managers on ICU and neuro
10/09/17	DNP student and PIC perform Gemba analyses with case managers on ICU and neuro
10/10/17	Strategy meeting with PIC
10/24/17	PIC and DNP student met to create new bundle
10/27/17	Meeting with PIC to discuss plan for case manager interventions
11/8/17	Possible “go live” with project on ICU and neuro
11/15/17	Project abandonment
11/17/17	Met with PIC to interview for Final Project Report
11/19/17	Phone interview with SPTM to interview for Final Project Report

Appendix S

Table 3. Informal interview of key stakeholders with themes

Informal Interviews with Project Stakeholders		
Question	Response	Theme
What were your goals for this project?	• Allocate resources based upon patient risk for death and readmission/Align services with need • Hospital-wide case management program • Use PRISM scores to stratify patients by risk • Reduce readmissions as part of FY18 Strategic Plan	• Reduction of admissions within 30 days of discharge is a central component of the CBH FY18 Strategic Plan • The PRISM Mortality Risk Prediction Tool is an important strategy for identifying high risk patients and improving outcomes
How do you think your goals aligned with the goals of case management?	• Incongruity between project champion and case management goals • Project champions: reduce readmissions • Case managers: decrease length of stay; discharge out of hospital	• Project champion and case management goals did not align • Case management team failed to understand how the overarching goal of reducing readmission could be embedded while attaining primary case management objectives
What were the barriers that prevented the implementation of this project?	• Case managers perceived this project to create more work for them • Absence of clear directive to proceed with implementation • Too many competing priorities in CBH • Lack of project champion involvement	• Case management team never gained an understanding of the big picture • Stakeholders in positions of authority in case management did not provide leadership for this project • CBH had other competing priorities hospital-wide • Project champions were not highly engaged and committed during attempts at implementation
What are your recommendations for next steps?	• Reestablish new plan through Readmissions Committee • Redesign/delineate roles of case managers, transition coordinators, nurse navigators, CNLs	• Shift responsibility for readmission work from the Quality Department to the Readmissions Committee • Develop a new plan for discharge interventions that focuses on post-discharge strategies