

Implementation of a Skilled Nursing Facility Readmissions Reduction Bundle

by

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Dedication

I would like to dedicate this work to my husband, Mark Bachmeier. His love, support and encouragement through the tough times, his belief and constant reminders that I was good enough, and his wise and patient counsel kept me going. Thank you, Mark.

### Abstract

Readmissions from Skilled Nursing Facilities (SNF) comprised 20% of all readmissions to the project facility. The Revised Iowa Model for Evidence-based Practice, along with rapid-cycle Plan, Do, Study, Act methodology were used to design, implement, and evaluate a readmissions reduction quality improvement project on a general medicine unit within a 130-bed community hospital. A project implementation team was formed and a nurse-led readmissions reduction bundle, accompanying bundle checklist, and Enhanced Care Nurse (ECN) consultations were developed and implemented for five months. The ECN provided consultations both in the inpatient project unit to streamline discharge processes, and in the Emergency Department (ED) in an attempt to avoid inpatient admissions from SNFs. There were 100 inpatient encounters during the course of the project with 14 readmissions from SNFs identified. Run chart methodology was utilized to document and monitor progress and data trends. Project findings included a 6% reduction in SNF readmissions to the project unit during implementation compared to facility readmissions the prior year. Recommendation for improvement includes implementation of the readmissions reduction bundle in all inpatient units that discharge patients within the project facility.

*Key words:* Skilled Nursing Facility; Readmission; Enhanced Care Nurse; Evidence-based Practice

## Table of Contents

Acknowledgments.....	2
Dedication.....	3
Abstract.....	4
Chapter One: Overview of the Problem of Interest.....	10
Background Information.....	10
Significance of Clinical Problem.....	13
Question Guiding Inquiry (PICO).....	14
Population.....	14
Intervention.....	15
Comparison.....	15
Outcome(s).....	15
Summary.....	15
Chapter Two: Review of the Literature Evidence.....	17
Methodology.....	17
Sampling strategies.....	17
Evaluation criteria.....	18
Literature Review Findings.....	18
Interventions.....	18
Collaborations.....	22
Perceptions.....	23
Limitations of Literature Review Process.....	25
Discussion.....	25

Conclusions of findings .....	25
Advantages and disadvantages of findings .....	26
Utilization of findings in practice .....	27
Summary .....	28
Chapter Three: Theory and Concept Model for Evidence-based Practice .....	29
Concept Analysis .....	29
Readmission from SNF .....	29
Nurse Satisfaction .....	29
Intervention Bundle .....	30
Theoretical Framework .....	31
Watson's Theory of Human Caring .....	31
Application to practice change .....	33
Evidence-based Practice Change Model .....	35
Revised Iowa Model of Evidence-Based Practice .....	35
Application to practice change .....	37
Summary .....	38
Chapter Four: Pre-implementation Plan .....	39
Project Purpose .....	39
Project Management .....	40
Organizational readiness for change .....	40
Inter-professional collaboration .....	41
Risk management assessment (SWOT analysis) .....	42
Strengths .....	43

Weaknesses .....	43
Opportunities.....	44
Threats.....	44
Organizational approval process.....	44
Information technology.....	45
Education plan .....	45
Cost Analysis of Materials Needed for Project.....	46
Plans for Institutional Review Board Approval.....	46
Plan for Project Evaluation .....	47
Demographics .....	47
Primary outcome measurement.....	48
Evaluation tool .....	48
Data analysis .....	48
Secondary outcome measurement.....	49
Evaluation tool .....	49
Data analysis .....	49
Data management.....	50
Summary .....	51
Chapter Five: Implementation Process .....	52
Setting .....	52
Participants.....	53
Recruitment.....	53
Implementation Process .....	54

Plan Variation ..... 56

Summary ..... 58

Chapter Six: Evaluation of the Practice Change Initiative ..... 59

Participant Demographics ..... 59

    Table 1 Project Demographics ..... 60

Intended Outcome(s) ..... 60

Findings ..... 61

    Readmissions Findings ..... 61

        Table 2 Project Readmissions Compared to Overall Readmissions ..... 61

        Figure 1 Run Chart Monitor of SNF Readmissions on Project Unit ..... 63

    Satisfaction Findings ..... 64

        Table 3 Pre/Post Implementation Satisfaction Questionnaire Responses ..... 65

    Summary ..... 66

Chapter Seven: Implications for Nursing Practice ..... 67

Practice Implications ..... 67

    Essential I: Scientific underpinnings for practice ..... 67

    Essential II: Organization and systems leadership for quality improvement and systems thinking ..... 68

    Essential III: Clinical scholarship and analytical methods for EBP ..... 69

    Essential IV: Information systems/technology and patient care technology for the improvement and transformation of healthcare ..... 69

    Essential V: Healthcare policy for advocacy in healthcare ..... 69

    Essential VI: Interprofessional collaboration for improving patient and population health outcomes ..... 70

    Essential VII: Clinical prevention and population health for



improving the nation’s health .....	70
Essential VIII: Advanced nursing practice .....	71
Summary .....	71
Chapter Eight: Final Conclusions .....	72
Significance of Findings .....	72
Project Strengths and Limitations .....	73
Project Benefits .....	75
Practice Recommendations .....	75
Final Summary .....	77
References .....	78
Appendix A: Literature Matrix .....	87
Appendix B: Iowa Model Revised .....	92
Appendix C: Skilled Nursing Facility (SNF) Emerging Themes .....	93
Appendix D: Bundle Checklist .....	95
Appendix E: Approval Letter .....	96
Appendix F: Education Plan .....	97
Appendix G: Project Budget .....	99
Appendix H: Project Facility IRB Approval Letter .....	100
Appendix I: University IRB Approval Letter .....	101
Appendix J: Data Collection Tool .....	102
Appendix K: Run Chart Template .....	103
Appendix L: Project Evaluation Tool .....	104
Appendix M: Roles and Responsibilities .....	105

## **Chapter One: Overview of the Problem of Interest**

The Affordable Care Act (ACA) of 2010 established the Hospital Readmissions Reduction Program (HRRP) in order to meet the goal of improving healthcare by linking payment to the quality of hospital care (Centers for Medicare and Medicaid Services [CMS], 2018; Wasfy et al., 2017). This value-based program, administered by CMS, instituted payment reductions for acute care hospitals that exceeded benchmark readmission rates for all-cause, unplanned hospital readmissions for patients with select diagnoses (CMS, 2018). Skilled nursing facilities (SNF) played an important role in achieving desired readmission goals for hospitals, as approximately one in four Medicare patients discharged from inpatient acute care were subsequently admitted to a SNF, and of those patients, approximately 25% experienced an unplanned hospital readmission within 30 days (Burke et al, 2017; Clark et al., 2017). Additionally, SNF patient readmissions to an acute care hospital are associated with increased morbidity and mortality (Fernandez-Taylor et al., 2018; Mileski et al, 2017; Yoo et al., 2015; Zuckerman, Sheingold, Orav, Ruhter, & Epstein, 2016).

Given the financial and patient care implications of this problem of interest, an evidence-based practice (EBP) change project was designed and implemented to address this issue. This project was conducted as a partnership with a community SNF. The purpose of this chapter is to discuss the background, clinical significance, and guiding clinical question supporting the implementation and evaluation of a 30-day readmission reduction project conducted in an inpatient, community hospital.

### **Background Information**

The HRRP revised the way hospitals are reimbursed, incentivized, or penalized for readmissions. Rather than the traditional fee-for-service reimbursement scheme, this program

established six readmission conditions for which full or partial reimbursement was at risk should a 30-day readmission occur for any cause. These conditions are: acute myocardial infarction (AMI), chronic obstructive pulmonary disease (COPD), heart failure (HF), pneumonia, coronary artery bypass graft surgery (CABG), and elective primary total hip and/or total knee arthroplasty. The program calculates excess readmission ratios (ERR), based on peer group benchmarking data during the measurement period for each of these conditions, and calculates reductions in payments for Medicare beneficiaries having one of these conditions as a primary discharge diagnosis during the readmission period. Conversely, inpatient hospitals below the peer group benchmark mean for readmissions during the reporting period were eligible to earn monetary incentives (CMS, 2018).

In addition to payment reductions associated with excess readmissions, hospital revenue is further at risk through the Hospital-Acquired Condition (HAC) Reductions Program established in Section 1886(p) of the Social Security Act (CMS, 2018). Medicare reimbursement reductions and claims denials were implemented for the following hospital acquired conditions as a part of this program: pressure ulcers, pneumothorax, fall-associated hip fracture, central line-associated bloodstream infection (CLABSI), catheter-associated urinary tract infection (CAUTI), Methicillin-resistant staphylococcus aureus (MRSA) bacteremia, clostridium difficile infection (CDI), and multiple post-operative conditions. Approximately 25% of patients discharged to SNFs are readmitted within 30 days (Mileski et al., 2017), and this number increases to 35% for patients who also were also diagnosed with dementia (Gilmore-Bykovskiy, Roberts, King, Kennelty & Kind, 2017). SNF patients who are readmitted are particularly at risk for acquiring these conditions as a result of additional exposure to inpatient care (Yoo et al, 2015).

Skilled Nursing Facility readmissions were not only potentially costly to hospitals by way of penalties, overall Medicare and Medicaid expenditures associated with beneficiary hospital readmissions from SNFs were estimated to range from \$4 billion to \$17 billion per year. Perhaps most important, unplanned 30-day hospital readmissions from SNFs were associated with increased mortality, and increased morbidity arising from hospital acquired conditions (Fernandez-Taylor et al., 2018; Mileski et al, 2017; Yoo et al., 2015; Zuckerman et al., 2016). In addition to monetary penalties sustained by hospitals, SNF patient outcomes and quality of care are negatively impacted by hospital readmissions.

Patients readmitted from SNFs have a higher risk of mortality than patients readmitted from the home or community. Older adults are vulnerable to functional and physiological decline associated with hospitalization, leading to decreases in functional reserve and extended disability (Burke et al., 2016; Yoo, et al., 2015). Fernandez-Taylor et al. (2018) further reported that the 60-day mortality of post-operative vascular surgery patients readmitted from a SNF was ten times higher than mortality of patients who did not.

The Congressional Research Service (U. S. Department of Health and Human Services, Office of the Inspector General [DHHS/OIG], 2014), in a Congressionally mandated study to determine the incidence of adverse events in SNFs, found that patient transfers between SNFs and acute care hospitals were particularly problematic for the medically fragile and frail elderly. The study suggests that many SNF-to-hospital transfers occurred in a hurried manner, often at night or on weekends when SNF and hospital staffing was most lean, which increased the risk for harm events both in the SNF and in the acute care hospital to which they are readmitted. The psychological impact to patients included disruptions in care plans and daily routines, increased risk of disorientation, and stress (Yoo et al, 2015).

Nationally, discharges from inpatient hospitals to SNFs accounted for approximately one quarter of all discharges, and nearly 25% of those patients returned to the hospital within 30 days. The national rate of readmission for SNFs has increased by 30% since 2000, suggesting increasing patient acuity in SNFs, or inappropriate discharges from acute care hospitals. Patients with heart failure were disproportionately impacted by readmissions, as this diagnosis is widely prevalent in older adults, and is a frequent readmission diagnosis for which SNFs and acute care hospitals must collaborate (Kripalani, Theobald, Anctil, & Vasilevskis, 2014). The development of quality relationships and communication between hospitals and SNFs is crucial to maintaining goals of care, family involvement and input, ongoing patient safety, and ultimately reductions in readmissions (Clark et al., 2017).

Relationships between SNFs and acute care hospitals are important to understanding the frequency and timing of 30-day readmissions. Historically, these relationships have been fraught with tension. The perspectives of SNF administrators regarding the transition of care from acute care hospitalization included, poor communication from the hospital; misaligned discharge diagnoses with the level of care SNFs are capable of providing; unclear expectations regarding goals of care between acute care providers, SNF, patients, and families; unclear hospital discharge paperwork and medication expectations; and discrepancies between hospital discharge summaries and discharge instructions. (Clark et al., 2017; Minges et al., 2019).

### **Significance of Clinical Problem**

Hospital readmissions from SNFs are costly and harmful, both to organizations and patients (Fernandez-Taylor et al., 2018; Mileski et al, 2017; Yoo et al., 2015; Zuckerman et al., 2016). In the project facility, 30-day readmissions from SNFs comprise approximately 20% of all readmissions month over month. The 2018 readmission rate was 0.07 (7%), and well within

the established organizational goal of 1.0; however, improvements are necessary to avoid penalties. Between fiscal years 2015 and 2018, the organization incurred over \$970,000 in reduced payments or penalties resulting from readmissions (WMC, 2018).

While this phenomenon has been widely explored and studied, little evidence exists supporting acute care inpatient, nurse-led, SNF readmission reduction efforts. A need existed in the project organization to create a sustainable and scalable program to reduce readmissions from SNFs. The purpose of the project was two-fold. The primary purpose was to design, implement, and evaluate a readmissions reduction bundle in an acute care community hospital. The secondary purpose was to improve communication and relationships between the discharging project facility and the partnering SNF.

### **Question Guiding Inquiry (PICO)**

Once the clinical problem was well understood, a clinical question was developed to underpin the inquiry and guide further development of the project. A clearly constructed question is designed to describe the phenomenon of interest, outline the scope of the inquiry, and provide clarity into the problem to be improved (Moran, 2020; Stone, 2002). PICO is an acronym for Population, Intervention, Comparison, and Outcomes. The clinical question guiding this inquiry asks, *“Can a nurse-led, hospital-based discharge bundle reduce all-cause readmissions from a partnering skilled nursing facility?”*

**Population.** The population targeted for this project was Registered Nurses (RN), RN Charge Nurses (CN), RN Case Managers (CM), the Enhanced Care Nurse (ECN) unit secretaries, Certified Nursing Assistants (CNAs), and the Nurse Manager (NM). Additional participants included pharmacists and pharmacy technicians. All staff were employed by the project facility, and all nursing staff worked on the inpatient, medical nursing unit. Staff

represent varying levels of skill, competence, and experience. There was no exclusion from participation based on age, gender, or ethnicity.

**Intervention.** The intervention consisted of the implementation of a discharge bundle of nurse-led activities for all SNF discharges, regardless of readmission status. For example, a discharge bundle was used for any patient being discharged to a SNF, whether it was the index admission or a readmission. Evidence-based programs that have demonstrated positive outcomes consisted of written discharge teaching or instructions, coordinated discharge planning, and coordination of care between team members (Adams, Stephens, Whiteman, Kersteen, & Katruska, 2014; Berkowitz et al., 2013; King et al., 2013).

**Comparison.** The metric utilized for measurement was the percent readmission reduction of SNF patients as compared to all readmissions. SNF and inpatient nursing staff satisfaction with process quality before and after the intervention period was also compared.

**Outcomes.** The primary outcome measure for the project was to decrease the percentage of readmissions coming from SNFs, defined as all-cause SNF readmissions divided by all readmissions multiplied by 100. The secondary project outcome was to increase nurse satisfaction with the discharge process. An overarching goal was to improve relationships between the SNF and the project facility.

## **Summary**

The problem of readmissions from SNFs to acute hospitals has been well described in the literature (Fernandez-Taylor et al., 2018; Mileski et al., 2017; Yoo et al., 2015; Zuckerman et al., 2016); however, little evidence existed to describe acute care, inpatient, nurse-led readmissions reduction programs. Once the background of the problem was understood, to include reimbursement reduction strategies associated with readmissions and hospital acquired

conditions, relationships between SNFs and hospitals, and the impact to patient quality, the clinical significance of the problem was defined. The clinical question guiding inquiry was then developed to direct further literature review to support evidence-based process improvement strategies.



## Chapter Two: Review of the Literature

The clinical question developed to guide project implementation and evidence review asked, “*Can a nurse-led, hospital-based discharge bundle reduce 30-day, all-cause readmissions from a partnering skilled nursing facility (SNF)?*” The literature was replete with evidence describing diagnoses and patient populations likely to contribute to hospital readmissions, and interventions intended to reduce hospital readmissions; however, little evidence was found describing interventions designed to reduce readmissions from SNFs implemented within an acute care hospital. This chapter reviews the evidence discovered pertaining to interventions designed to reduce readmissions in the SNF patient population, and also summarizes evidence describing perceptions of SNF staff and providers pertaining to factors influencing the readmission process.

### Methodology

**Sampling strategies.** An electronic search was conducted of the PubMed/MEDLINE, the Cumulative Index to Nursing and Allied Health Literature (CINAHL), Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled Trials, and Google Scholar databases. The search was conducted utilizing the following search filters: English-language, full-text with available abstract, published from 2009 to 2019, and study participants aged 65 years and older. Keywords utilized in the literature search process were: nursing homes, readmission, skilled nursing facilities, intervention, prevention, and nurse-led. The Boolean operators “AND” and “OR” were used to combine keywords to expand evidence yield. Reference lists of the articles included in the final review were also searched for relevant material.

**Evaluation criteria.** The sampling strategy as described produced 622 articles for abstract review. The criteria applied for inclusion in the literature review were: (a) the article consisted of an intervention(s) to reduce readmissions; (b) the intervention(s) involved SNF patients; (c) the intervention(s) involved reducing readmissions from SNFs; or (d) perspectives of expert healthcare personnel on interventions to reduce readmissions from a SNF. After applying the criteria described, 16 articles were included in the comprehensive review that supported the project intervention of utilizing discharge bundles to reduce acute care readmissions from SNFs (see Appendix A).

### **Literature Review Findings**

While evidence was found detailing interventions designed to reduce readmissions from SNFs, no evidence was found describing interventions implemented in an acute care hospital designed to reduce admissions from SNFs. This review focused on the evidence-based interventions and collaborations to reduce hospital readmissions, and on perceptions of SNF and hospital staff on barriers to effective transition from hospitals to SNFs. The review was organized by using the following: interventions, collaborations, and perceptions.

**Interventions.** The Project Reengineered Discharge (RED) program, developed by Jack et al. (2009), included a series of interventions designed to minimize overall hospital readmissions. A dedicated nurse discharge leader arranged discharge follow-up appointments during the inpatient hospital stay, reinforced medication reconciliation, and conducted patient education with individualized teaching plans that were copied to the patient's primary care provider. A social worker assisted in the acquisition of durable medical equipment and connections with needed community resources. A Nurse Practitioner (NP) consulted with the patient's primary care provider (PCP) prior to the patient's discharge, and a clinical pharmacist

followed up with patients two to four days post discharge by phone to reinforce discharge and medication instructions.

Berkowitz et al. (2013) adapted the original study by Jack et al. (2009) for implementation in a SNF, versus an acute care hospital, to minimize re-hospitalization rates in the 30 days after SNF discharge. The interventions in this adapted version included a nurse leader; however, as opposed to the original design, the nurse leader was a part of the regular staff that was given additional discharge responsibilities. These responsibilities included providing a comprehensive review of medications prescribed at discharge, providing education as to purpose of the medications and side effects, creating an individualized discharge plan, and providing education to patient and family to prepare for discharge using the teach back method. A home care coordinator or social worker assisted with post-discharge equipment and resource needs and provided an emergency number for patients and families to use for questions and concerns. There was no follow-up phone call made in this iteration of Project RED; however, study coordinators contacted the patient by phone 30 days after discharge to obtain survey data. The rate of re-hospitalization within 30 days of SNF discharge prior to Project RED was 18.9% and for participants during the intervention was 10.2% ( $p < 0.05$ ). Additional findings suggested that intervention participants were more likely to have completed an appointment with their PCP or a specialist (70.5% versus 52%,  $p < 0.001$ ).

The Interventions to Reduce Acute Care Transfers (INTERACT) initiative was first developed as a quality improvement project, for SNFs supported by The Centers for Medicare and Medicaid Services (CMS), to reduce costs and poor outcomes associated with hospital readmissions in 2010 (Ouslander, Bonner, & Herndon, 2014). There were four fundamental strategies developed to guide this initiative. The first was a commitment to the utilization of

quality management principles. This consisted of the formulation of a project team tasked with developing outcomes, designing measurement methodologies, and providing general oversight into the project. This team was led by a designated facilitator who was responsible for keeping the project team on track, and for the utilization of root cause analyses to investigate variances to the established processes. The second strategy involved early identification and intervention for patient condition changes, and to manage appropriate condition changes within the SNF to avoid a hospital transfer. The third strategy consisted of improving advanced care planning and use of palliative care practices as an alternative to hospitalization, and the last strategy was comprised of improving communication and documentation between providers, facilities, staff, patients, and families.

The INTERACT program utilized a system of assessment and communication tools alongside standard day-to-day care to include new patient assessment and medication reconciliation tools, early warning tools to alert staff of patient status changes, structured communication tools and progress notes, diagnosis-specific care pathways to standardize care, and transfer checklists should hospitalization become necessary. Quality improvement tools were also used for hospitalization rate tracking and root cause analyses of hospital transfers (Huckfeldt et al., 2018; Kane et al., 2017; Kripalani, Theobald, Anctil, & Vasilevskis, 2014; Ouslander et al., 2009; Ouslander et al., 2014).

While this quality improvement initiative has been well implemented, it has not demonstrated the intended results in all studies reviewed. Kane et al. (2017) found no statistically significant reductions in hospitalization rates compared with control SNFs ( $p= 0.25$ ), while Huckfeldt et al. (2018), Ouslander et al. (2009) and Kripalani et al. (2014) found notable reductions after implementation of the INTERACT tools, 11.2% reduction ( $p< 0.001$ ), 36%

reduction, and 17% reduction respectively. High quality initial and ongoing staff and provider training, high levels of provider engagement, and consistent and proper use of INTRACT tools were attributed to successful reductions in hospitalizations and re-hospitalizations from SNFs in this model (Kane et al., 2017; Kripalani et al., 2014; Huckfeldt et al., 2018; Ouslander et al., 2009).

The Enhanced Care Program (ECP), as studied by Rosen et al. (2017), involved adding three interventions to standard care, resulting in a 6% reduction in unadjusted, 30-day readmission rates ( $p < 0.001$ ). Interventions consisted of a team of NPs providing 24/7 care to SNF patients, pharmacist-driven medication reconciliation at SNF admission, and educational in-services for SNF nursing staff building on the INTERACT model of care pathways and communication tools. NPs provided an on-site evaluation within 24 hours of SNF admission, and remained available on an on-call basis to nursing staff. This was followed up with weekly standard rounding from NPs, or more frequently if patient condition warranted. Each NP encounter consisted of a medical record review, a dialogue with the attending physician to develop treatment plans, and discussions with nursing staff (Rosen et al., 2017).

The ECP pharmacist conducted a review of the patient's medical record at admission, and completed medication reconciliation within 72 hours of admission. This process involved pharmacy technician gathering medication information and providing it to the ECP pharmacist for review. Discrepancies and recommendations were communicated to the NP for resolution (Rosen et al., 2017).

Educational in-services were provided to SNF nursing staff on a monthly basis. Clinically relevant topics were identified by the ECP team and provided by a dedicated nurse educator. Topics of particular clinical relevance to the SNF population included fall prevention,

hand hygiene, venous thromboembolism, cardiovascular disease, advanced care planning, and the use of INTERACT tools (Rosen et al., 2017).

**Collaborations.** Developing SNF provider networks/relationships is one approach that hospitals have utilized to reduce readmissions. Hospitals that develop relationships with preferred providers do not seek to limit patient choice, but seek to establish formal relationships, sometimes of a contractual nature, to improve care and provide resources and training for better outcomes. Some hospitals have developed interdisciplinary teams to evaluate SNFs, assist with data management and outcomes tracking, and make visits to provide continuity of care and treat in place. Hospitals that developed relationships with partnering SNFs reduced readmission rates more often than hospitals that did not (Hsiao et al., 2017; McHugh et al., 2017; Rahman, Gadbois, Tyler, & Mor, 2018). Rahman et al. (2018) further reported that collaborative relationships were associated with the likelihood that hospital patients discharged to post-acute care were sent to better quality SNFs; however, no statistical data were provided by the authors to support.

Initiatives such as discharge protocols and hospital-facilitated SNF staff education (McHugh et al., 2017), structured hand-offs, and improved two-way communication (Hsiao et al., 2017) have been described in hospital-SNF collaborative. Expert hospital staff and resources can be made available on a consultative basis to SNFs, who often lack expertise at night and on weekends, contributing to unnecessary hospitalizations or Emergency Department (ED) visits. For example, one hospital reported providing SNF staff training and resources to avoid hospital transfers solely for blood transfusions (Hospital Case Management, 2014).

While there are scant data to support the effectiveness of SNF-hospital networks or relationships, one study provided limited data to suggest a collaborative may positively impact

readmissions. McHugh et al. (2017) found a 6.1% decline in re-hospitalizations for patients discharged to a network SNF; however, the results were not statistically significant ( $p > 0.05$ ). Perceived impact of such networks, while anecdotal, are encouraging. Development of protocols, care pathways, and discussions between hospitals and SNFs facilitated better relationships and collaboration, and was perceived to improve patient outcomes (Hsiao et al., 2017).

**Perceptions.** In order to develop strategies to reduce readmissions from SNFs, it is important to understand barriers as perceived by staff and providers who provide care in these facilities. Poor hand-off communication was highly rated in perception studies of SNF staff (Davidson et al., 2017; King et al., 2013). Staff reported missing, inaccurate or incomplete hospital discharge paperwork (Davidson et al., 2017; King et al., 2013; Lamb, Tappen, Diaz, Herndon, & Ouslander, 2011; Minges et al., 2019); mismatches between patient needs and SNF capabilities (Clark et al., 2017; Gilmore-Bykovskyi et al., 2017; King et al., 2013; Lamb et al., 2011; Minges et al., 2019); conflicting information in the hospital discharge summary and the medication reconciliation document (Davidson et al., 2017; King et al., 2013), poorly defined goals of care at hospital discharge (Clark et al., 2017; Minges et al., 2019), and a lack of understanding about the type of care SNFs were capable of providing (Minges et al., 2019).

SNF nurses reported being overwhelmed by the constant nature of information gathering and reconciliation, often manifesting in large volumes of transfer papers that did not make sense to them (King et al., 2013). Strained inter-facility relationships were associated with inadequate communication regarding medication doses and timing, necessary diagnostic findings (Clark et al., 2017; Minges et al., 2019), and the inability to seek follow up information or consultation with the discharging facility (Clark et al., 2017). Hospitals were perceived by SNF staff to be

more focused on early or quick discharges than the quality and accuracy of hand-off (Davidson et al., 2017).

Staff further reported that SNF-based processes were sometimes not adequate in minimizing readmissions. For example, staff reported reduced weekend and holiday staffing, often leading to transfer because of inability to care for a sick patient; conservative decision-making regarding transfer to the hospital; pressures from patient families to transfer to the hospital; and knowledge and skill gaps in SNF staff (Clark et al., 2017; Lamb et al., 2011). Additional reasons provided by SNF staff for hospital transfers were PCP ordered transfer without consultation with SNF providers, the facility did not offer the ordered treatment, and advanced directives were not in place or not followed (Lamb et al., 2011). SNF and hospital providers perceived that nonclinical behavioral challenges, housing inadequacy, and substance abuse contributed to readmissions (Minges et al., 2019).

Nursing staff reported suggestions for improving the transition process between hospital and SNF, to include communication of medical information up to 24 hours in advance of transfer, having immediate access to a prescribing provider, and developing standardized methods for communicating medical information. SNF staff also suggested that improving their knowledge and skill level would minimize transfers to the hospital due to being able to manage more complex care in place (Lamb et al., 2011; King et al., 2013). Finally, SNF staff suggested that dedicating resources, such as a newly developed role, to manage hospital to SNF transitions could clarify discrepancies in hospital documentation, facilitate necessary resources, and communicate with hospital staff (Clark et al., 2017).



### **Limitations of Literature Review Process**

The primary limitation of this evidence review was the paucity of information to support a hospital-based intervention to reduce readmissions from SNFs. While several studies were reviewed describing interventions designed to reduce readmissions from SNFs, all were implemented in the post-acute setting. A further limitation was the restriction to full-text journal articles with available abstract, and not including other relevant reference material. The evidence reviewed was not limited to scholarly studies. While several authors provided statistical support for study conclusions, others only provided descriptive data to support results. Expert opinion and quality improvement projects were also included in this review that provided no outcome data.

### **Discussion**

**Conclusions of findings.** The evidence reviewed clearly provides support for the development and implementation of targeted strategies designed to reduce re-hospitalizations in the SNF patient population. While no studies were found describing hospital-based interventions, the needs and challenges addressed in the evidence reviewed would be relevant irrespective of the facility in which they were implemented. Factors contributing to hospital readmissions of this patient population cross facility boundaries, and could be effectively implemented within an acute hospital setting prior to discharge.

Interventions that were both clinically and statistically significant were comprised of discreet components bundled together for maximum effectiveness. Bundle components that were most effective included a dedicated resource person to facilitate the complex nature of hospital-to-SNF transitions, accurate and complete medication reconciliation, nurse-led process,

and some form of follow up, either to determine patient's ability to complete PCP appointment or to reinforce discharge instructions and teaching.

Establishing networks and relationships, while neither widely implemented nor described as statistically significant to readmissions reduction, was described as an important feature in high quality communication and complete care management processes. Developing preferred provider networks could be outside of the legal and regulatory scope of hospitals to independently establish; however, large systems that are also Accountable Care Organizations could investigate the feasibility of such network development. Of particular importance is the development and maintenance of positive relationships with local SNFs in order to assure high quality handoff processes, complete and accurate transfer documents, and resource availability for questions.

Perceptions and input from stakeholders are critical to understanding the quality improvement process. Understanding the experiences of SNF staff and providers and barriers to effective patient handoff could inform improvement efforts. Communication, relationships, and accurate discharge documents were the top reported barriers to safe and effective care transition processes. There is also clear evidence to support hospital and ED provider education on the capabilities and limitations of the SNF environment relative to patient acuity. Based on the understanding of the literature, the evidence-based project focused on the design and implementation of a discharge bundle for patients being discharged from the inpatient medical unit to the partnering SNF.

**Advantages and disadvantages of findings.** Findings from the literature review contained numerous examples of effective interventions to reduce hospital readmissions from SNFs. The review also contained evidence that preferred networks of SNFs could contribute to

reduced readmissions. Perceptions of SNF providers and staff were useful in the design of appropriate handoff models that would improve the quality of the transition process.

The distinct disadvantage of the findings was that no evidence was discovered supporting or describing discharge bundle interventions implemented in acute care hospitals designed specifically to reduce readmissions from SNFs. All of the interventions reviewed were implemented in a SNF, but designed to reduce hospital readmissions or inappropriate transfers. Some interventions were not feasible to be implemented in an acute care hospital, such as INTERACT; however, interventions such as the ECP and adapted Project RED contained useful components appropriate to the acute care environment.

**Utilization of findings in practice.** The review provided evidence to support the development and implementation of a bundled discharge intervention approach to reduce 30-day hospital readmissions from SNFs. Review of both scientific and demographic data provided understanding into the current state of the phenomenon of interest, and of successful and unsuccessful care delivery approaches to support a foundation for project design. Findings were synthesized and utilized to inform a quality improvement project plan to facilitate a change in practice to reduce hospital readmissions from SNFs. Evidence review further informed project implementation strategies, interventions and associated practice guidelines, outcome metric selection, and evaluation methodologies.

The project facility uses the Plan, Do, Study, Act (PDSA) quality improvement methodology to test change processes. This methodology, also known as the Shewert Cycle uses quick cycles of planning, implementing, evaluating, and refining until the optimal process is achieved (Moran, 2020). The evidence review informed the planning for practice change by providing insight into the current state of the problem. Findings also provided support for

selected project implementation tactics, provided context into the analysis of results, and reinforced further actions taken based on results.

### **Summary**

Evidence reviewed for this project provided support for nurse-led, targeted interventions to reduce re-hospitalizations from the SNF patient population. The evidence provided further support for interventions intended to improve communication and critical information exchange from acute care hospitals to SNFs, thereby improving the health outcomes of a vulnerable patient population. Mitigating costs associated with readmissions and potential subsequent health conditions associated with hospitalization demonstrates alignment with the Institute of Healthcare Improvement's (IHI) Triple Aim.

The Triple Aim, originally published in 2008, suggested that in order for healthcare to improve, it required pursuit of specific goals designed to (1) improve the individual experience of patient care, (2) improve the health of populations, and (3) reduce the cost of care (Whittington, Nolan, Lewis, & Torres, 2015). This project addresses all three goals by improving the care transition process for SNF patients and their families, providing a firm foundation on which to base continuing goals of care, and reducing the costs and disruptions associated with unnecessary hospitalizations. The theory and concept models to support project design and implementation were selected, and will be detailed in the following chapter.

### **Chapter Three: Theory and Concept Model for Evidence-based Practice**

Theories help to explain the basic assumptions and values ascribed to a profession and its work (McEwen, 2019). This chapter outlines the theoretical and conceptual frameworks used to develop, implement, and evaluate the work of reducing readmissions from skilled nursing facilities (SNF). Critical links between the theoretical framework and the nursing practice change are discussed, the evidence-based concept model is described, and key concepts are clearly defined.

#### **Concept Analysis**

Concepts are the abstract components of a phenomenon of interest (McEwen, 2019). A concept analysis helps to clarify and define the components of a phenomenon to provide context, understanding and relevance to the project (Nahardani, Ahmadi, Bigdeli, & Arabshahi, 2019). The concepts integral to the development and implementation of this project were identified as:

**Readmission from SNF.** The Centers for Medicare and Medicaid Services (CMS) defines readmission as, “a return hospitalization to an acute care hospital following a prior acute care admission within 30 days of discharge” (Adams et al., 2014, p. 169). Readmission from a SNF is further defined as the avoidable, costly, and potentially harmful return to an acute care hospital within 30 days of discharge (Burke et al., 2016; Fernandez-Taylor et al., 2018; Flanagan et al, 2018; Mileski et al., 2017; Yoo et al, 2015). This distinction is important to the phenomenon of interest as readmissions from SNFs are largely considered as having negative impacts on SNF patients; whereas, this is not necessarily the case with readmissions from home or other locations.

**Nurse satisfaction.** The literature is replete with studies and measurements of satisfaction as it relates to work environments and other job-related attributes, such as wages,

work hours, leadership, benefits, etc. (Corwin, Johnson, Craven, & Marsh, 2008). Job satisfaction has been defined by Locke in his 1976 seminal work as, “a pleasurable or positive emotional state resulting from the appraisal of one’s job or job experiences” (as cited in Mercedes et al., 2016, p. 134), “the fulfillment of an employee’s needs” (Liu, Aunguroch, & Yunibhand, 2016, p. 86), how one feels about a job (Cowin et al., 2008), and “the positive emotional response that an employee has about his or her achievement of job value or equity” (Liu et al., 2016, p. 86). Job satisfaction is often described within the context of extrinsic values, such as benefits and bonuses, or intrinsic values such as status, sense of achievement, self-worth, self-esteem, and the ability to be creative (Corwin et al., 2008) as opposed to explicitly defining the construct. To synthesize, nurse satisfaction, when considered in the context of job satisfaction, can be more specifically defined as a construct describing nurses’ positive feelings about work conditions and the work value that meet desired needs arising from nurse-centric intrinsic values and perceived equity of such work (Corwin et al., 2008; Halupa, Halupa, & Warren, 2018; Liu et al., 2016).

**Intervention Bundle.** An intervention bundle, or care bundle, has been defined as a “structured group of interventions based on clinical practice guidelines that improve processes of care, encourage compliance to guidelines, and have been shown to improve patient outcomes” (Chaboyer, et al., 2015, p. 1661). Care bundles have been further described as, “the implementation of a set of evidence-based practices such that, when each element is executed individually, it improves patient...outcomes; when all of the practices are executed together, they provider better outcomes than when implemented individually” (Purva, 2018, p. 156). Intervention or care bundles have been also described as containing multiple, separate components to be implemented in conjunction with each other (Johnston, Arora, King, & Darzi,

2018; Roberts et al., 2017). Intervention bundles can be summarily defined as sequential series of evidence-based interventions, that when correctly applied, can improve patient outcomes (Chaboyer et al., 2015; Purva, 2018). A synthesized definition of discharge bundles for the operational purposes of this project is: a nurse-led, structured set of evidence-based interventions used to improve the quality of hospital discharges of SNF patients and to reduce unnecessary re-hospitalizations of this patient population.

### **Theoretical Framework**

**Watson's Theory of Human Caring.** The theoretical framework underpinning this evidence-based project was Watson's Theory of Human Caring. The basis of this theory is that caring is the foundational essence of the practice of nursing by establishing transpersonal relationships and caring moments (Watson, 2008; Wei & Watson, 2019). Through caring, one demonstrates humanity by authentically identifying with others on an interpersonal/transpersonal level, and acceptance by accepting a person for who they are and who they might become. This is established through authentic, transparent, and intentional caring moments with others. Dr. Watson further asserts that effective caring promulgates health, healing, and transcends the fears associated with the consequences of illness. The Theory of Human Caring is established as an essential compliment to curing science and is fundamental to restoring health (Watson, 2008).

The theory aims to assure balance and harmony in relationships by intentionally creating an environment conducive to healing or learning, and utilizes caring factors, or Caritas Processes (Clark, 2016; Watson, 2008), to support nurses in operationalizing the abstract concepts of this theory. This reinforces that a loving approach to caring for others is the most important aspect of nursing care (Ozan, Okumus, & Lash, 2015). There are ten Caritas

Processes supporting the Theory of Human Caring. These processes provide concrete guidance for nursing interventions and behaviors, which Watson (2008) describes as follows:

1. Practicing loving-kindness and equanimity for self and other
2. Being authentically present; enabling/sustaining/honoring deep belief system and subjective world of self/other
3. Cultivating one's own spiritual practices; deepening self-awareness, going beyond 'ego self'
4. Developing and sustaining a helping-trusting, authentic caring relationship
5. Being present to, and supportive of, the expression of positive and negative feelings as a connection with deeper spirit of self and the one-being-cared-for
6. Creative use of self and all ways of knowing/being/doing as part of the caring process (engaging in artistry of caring-healing practices)
7. Engaging in genuine teaching-learning experiences within context of caring relationship-attend to whole person and subjective meaning; attempt to stay within other's frame of reference (evolve toward 'coaching' role vs. conventional imparting of information)
8. Creating healing environment at all levels (physical, nonphysical, subtle environment of energy and consciousness whereby wholeness, beauty, comfort, dignity, and peace are potentiated (Being/Becoming the environment)
9. Reverentially and respectfully assisting with basic needs; holding an intentional, caring consciousness of touching and working with the embodied spirit of another, honoring unity of Being; allowing for spirit-filled connection



10. Opening and attending to spiritual, mysterious, unknown existential dimensions of life-death-suffering; ‘allowing for a miracle’ (p.31).

The theory contends that nursing is a process of human-to-human caring, while not curative in and of itself, creates an environment where positive relationships, and thereby healing, can more readily occur (Ozan et al., 2015). As the theory has evolved, the concept of the transpersonal caring moment has remained a core element of understanding and utilizing the theory in nursing practice. Transpersonal relationships are described as relationships in which the nurse affects and is affected by the other, whether patient, student, or colleague (Clark, 2016). Wei and Watson (2019) conducted a qualitative study in which they establish that the theory can also be extended to inter-professional settings. For example, the authors state that, much like relationships with patients, inter-professional relationships are transpersonal, intentional, and transcendent, which impacts the dynamics of the inter-professional team. Inter-professional human caring is necessary to the creation of the caring-healing environment.

**Application to practice change.** Watson (2008), and Wei and Watson (2019) have posited that the Theory of Human Caring is a fundamental underpinning in the creation of both caring/healing patient care relationships and transpersonal/authentic inter-professional relationships. While the primary outcome of this evidence-based project focused on improving the patient care outcome measure of readmission reduction, the secondary measure and overarching project goal were inter-professional in scope. Establishing transpersonal, authentic, and trusting relationships with nursing staff in the project facility and the partner Skilled Nursing Facility (SNF) were paramount to the success of this work.

Gaining SNF nursing staff perspective was an important first step in the pre-design phase of the project. The project design not only had to improve the identified primary outcome

measure, it also had to work within the workflow of nursing staff at both facilities, so input was important to informing the design process. As described in Chapter One, relationships between hospitals and SNFs have historically been tension-filled due to poor communication from the hospital to the SNF, misaligned goals of care, and confusing discharge paperwork, to include medication reconciliation (Clark et al., 2017; Minges et al., 2019). The same concerns existed between the project facility and partner SNF. Therefore, it was important to approach the stakeholder sessions demonstrating kindness and equanimity, being authentically present with the SNF representatives, going beyond one's own perspective of the issue, developing a helping-trusting relationship, being present to and supportive of the expression of negative feedback, and being open to a positive teaching/learning/coaching relationship (Watson, 2008).

Likewise, while the project facility staff had an established discharge workflow, the proposed project would alter that workflow somewhat, and sufficient input would need to be obtained in the pre-design phase of the project. Since the relationship between the project manager and the project facility staff was substantially different than the SNF staff, in that the project manager was a project facility administrator and had reporting relationships with the nursing staff, a different approach was required. As the change model will be more explicitly described in the next section, engaging key personnel is an important step in the enculturation and dissemination of the results of improvement efforts (Buckwalter et al., 2017). Engaging in genuine teaching/learning/coaching relationships versus the more traditional information-sharing/policy-making role of an administrator would be key to obtaining buy-in from project facility staff. As a result, being open to both positive and negative feelings of project facility staff, being authentic and kind, and creating a healing environment were important Caritas Processes to incorporate into project management strategies in the project facility (Watson,

2008). As Wei and Watson (2019) conclude, the Theory of Human Caring can be effectively used as the underpinning for inter-professional relationships, and when applied, healthcare professionals reach a deeper caring consciousness to care for each other and promote patient care.

Last, while SNF patients were not the project participants, it was important to establish that the project was patient-centered, in that the outcome of this project was ultimately designed to improve the care and reduce potential harm of SNF patients by reducing 30-day readmissions in this patient population. As discussed in Chapter One, unplanned 30-day readmissions, in the SNF patient population, were associated with increased mortality, increased morbidity associated with hospital acquired conditions (HAC), and increased physical and functional decline ultimately leading to increased disability (Burke et al., 2016; Fernandez-Taylor et al., 2018; Mileski et al., 2017; Yoo et al., 2016). The underlying theoretical processes used to support the project from this perspective were approaching basic needs of the SNF patient with a deep sense of respect and honor, creating an environment where dignity was maintained, and establishing authentic relationships with SNF patients and their families.

### **EBP Change Model**

**Revised Iowa Model of evidence-based Practice.** The change model selected for use with project implementation was the Revised Iowa Model of Evidence-based Practice (see Appendix B). Briefly, the Iowa Model was first developed and published 25 years ago in order to guide nurses in the incorporation of research findings into practice to improve the outcomes of their patients. Specifically, this model provided a step-by-step guide on how to ascertain a clinical problem, match it with a research-based intervention, disseminate the results, and monitor the outcome (Brown, 2014).

The Iowa Model Collaborative revised the original model and validated the results in order to simplify the model and include patient preferences and values. The revisions updated quality, regulatory, and engagement components. The revised model also incorporated implementation science principles, to include key elements for sustaining change over time (Buckwalter et al., 2017).

The revised model depicts a more linear algorithm with more clearly defined decision points and instructions for users (Buckwalter et al., 2017; White & Spruce, 2015). The revised model begins with the identification of a problem and guides the user to consider issues pertaining to clinical/patient care, organization/state/national initiatives, the presence of data or new evidence, accrediting agency requirements, or philosophies of care. The model then prompts the user to create a purpose or problem statement. The first decision point asks whether the defined issue is a priority for the team, organization or patient care. If the problem is determined to be a priority issue, the model instructs the user to form a team to assemble, appraise and synthesize evidence. If the problem is not a priority, the model guides the user to consider another opportunity.

The model guides the team to the second decision point, whether there is sufficient, high quality evidence to move forward with a practice-change design. If the team determines there is not sufficient evidence, the model suggests conducting nursing research. If the team determines that sufficient evidence exists of the appropriate quality and quantity, the model guides the team to design a product and pilot the practice change, after considering patient preferences, resource constraints, and required approvals to proceed. The design should incorporate protocols, evaluation and implementation plans, baseline data, education for clinicians, and post-pilot data.

After the pilot period, the model guides the team to the third decision point, which asks whether the change that was piloted is appropriate for adoption into practice. If no, the model guides the team to consider other options or redesign. If it is determined that the change is appropriate for adoption into general nursing practice, the team is guided to integrate and sustain the practice change. Once key personnel are engaged and the new processes is hard wired, the model guides the team to monitor practice changes using quality improvement principles, and disseminate the results (Buckwalter et al., 2017).

**Application to practice change.** The Revised Iowa Model was developed for the purpose of guiding nurses in a step-wise process to incorporate evidence into practice changes in order to improve patient care (Buckwalter et al., 2017). The identified problem was determined based on organizational data indicating a 20% readmission rate from SNFs, and associated penalties associated with the Hospital Readmission Reduction Program (Wilkes Medical Center [WMC], 2018; CMS, 2018). A clinical question was developed using the Population, Intervention, Comparison and Outcomes (PICO) methodology. The identified problem was determined to be a priority for the organization, and sufficient evidence was present to support the evidence-based project. Support was obtained from project facility leadership to form a team to implement a change in practice relative to the discharge process for patients readmitted from SNFs.

In the design phase of the evidence-based project a team, to include the site champion, was assembled and relevant evidence supporting the proposed change in practice, along with baseline data and available resources was shared. Patient preferences were determined, and team input was utilized to inform discharge bundle interventions, implementation and evaluation plans, and key personnel engagement methods. The team participated in necessary revisions to

the implementation plan, developed methods to hard wire the practice change into daily patient care, and monitored key indicators using the Plan, Do, Study, Act organizational quality improvement methodology. The team was involved in the dissemination of results of the project to nursing personnel throughout the health system.

### **Summary**

The Theory of Human Caring and the Revised Iowa Model for Evidence-based Practice set the infrastructure on which the proposed project was developed. The creation of caring/supporting moments, both with project facility staff and SNF staff, influenced buy-in for the project and supported an authentic, caring leadership model for the project team. The Revised Iowa Model guided the project manager, site champion, and project team through effective project pre-implementation project planning, design, implementation, evaluation, and dissemination of results.

## **Chapter Four: Pre-implementation Planning**

This chapter describes project management components, a brief cost analysis, the Institutional Review Board (IRB) approval processes, and the plan for project evaluation. Details pertaining to organizational readiness, implementation team composition, and technology considerations are explained. The project evaluation plan, primary and secondary outcome measures, data analysis and management, participant education, and the evaluation tool are described.

### **Project Purpose**

The purpose of this evidence-based, quality improvement project was to decrease the hospital readmission rates of skilled nursing facility (SNF) patients by implementing a discharge bundle of nurse-led interventions for this patient population. While readmission rate was the primary outcome measure to gauge the success of the project; a secondary, but equally important purpose, was to improve relationships with area SNFs. Planning and design aspects of this project specifically aimed at this secondary purpose were improving the quality of information exchange between hospital and SNF staff, incorporating SNF stakeholder feedback into the project design process, and inviting key SNF staff to participate in patient discharge planning huddles conducted at the project facility. Interventions comprising the discharge bundle were based on best practices found in the evidence review and needs identified during SNF stakeholder interviews. The interventions selected for the project did not require incremental resources and included:

- Accurate summary of the hospitalization course,

- Pharmacist-conducted medication reconciliation, to include resolution of discrepancies contained in provider discharge summaries, discharge prescriptions, and SNF formularies,
- Nurse-to-nurse telephone handoff prior to discharge from the hospital utilizing the established handoff tool in the electronic medical record with call-back number,
- Enhanced Care Nurse discharge and Emergency Department consultations

### **Project Management**

**Organizational readiness for change.** The project facility has been in a near constant state of change for the past two years. In 2017, the facility was acquired by a large, academic system, which necessitated wholesale management, process, practice, and policy changes. Employees have become accustomed to multiple process changes, are generally positive and participative.

In addition, employee engagement surveys are conducted annually across the health system, in which the project facility is a network hospital. The most recent survey, conducted in the spring of 2019, demonstrated high levels of employee engagement in the project facility. The project facility mean engagement score was 4.20, of a maximum score of 5.0. In further support of organizational readiness, the organization demonstrated high leader and team scores as measured by the survey (Press Ganey, 2019).

Nursing staff were engaged and participative in shared governance activities at both the project facility and health system levels. There are two project facility-based shared governance teams on which nursing staff regularly attend and participate. In addition, project facility nurses were engaged in health system-level nursing governance practice and research collaborative



teams. This level of nursing staff engagement and enthusiasm supported high levels of readiness for practice change.

The organization also demonstrated readiness for change. The facility-based Readmissions Committee was defunct due to committee leadership changes. There was limited organizational data gathering, analysis, and action planning around this issue after those changes occurred. While this project did not address the entire scope of the readmissions concern, it did address approximately one quarter of the monthly readmissions and re-invigorated a budget-neutral team positioned to manage readmissions going forward. New health system-level resources were available for data mining and reporting which supported the group's readmissions oversight function.

Although the project facility demonstrated readiness to incorporate this practice change into daily care routines, a barrier to implementation was identified. Hospital medicine and Emergency Department provider support was key to the successful implementation and sustainability of this project. Provider availability and work schedules precluded implementation team participation; therefore, support and input was solicited individually from the most frequently scheduled providers.

**Inter-professional collaboration.** The inter-professional project implementation team was formed to review the clinical problem and proposed interventions, analyze baseline data, understand the quantity and quality of evidence reviewed, analyze SNF stakeholder feedback, and provide input into discharge bundle design, implementation, and monitoring. After project implementation, the plan is for the team to transition to an ongoing Readmissions Team and review project compliance and outcome data, and utilize Plan, Do, Study, Act (PDSA) cycles to test and improve practice changes. Team members included the charge nurse, one nursing staff

member, the lead unit secretary, the nurse manager (site champion) from the implementation unit, a nurse case manager, a social worker, a pharmacist, the facility quality manager, and the Enhanced Care Nurse (ECN). The project manager functioned as the administrative representative on the team, providing needed resources and oversight into the practice change.

The ECN was a relatively new role in the project facility designed to manage care transitions, facilitate appropriate goals and settings of care, intervene with SNF patients in the Emergency Department to avoid admission, and improve patient and family experience around care transitions. This role also provided the resource element of the discharge bundle. Hospital medicine provider input was incorporated into implementation team discussions.

A partner community SNF was identified to provide insight into their experience with receiving discharged patients from the project facility. Stakeholder sessions provided the project manager with feedback, that if incorporated into project design, would improve the experience of patients and SNF staff, contribute to the overall quality of care transition between hospital and SNF, and reduce readmissions. This feedback, which aligned with the evidence reviewed, was used in the discharge bundle design. While SNF nursing staff were not a part of the implementation team, two stakeholder feedback sessions were conducted in July 2019 and August 2019 at the partnering SNF to ascertain barriers to effective hospital-to-SNF transition and potential contributors to hospital readmission. Several themes emerged during the sessions that were incorporated into project design (see Appendix C).

**Risk management assessment.** A strengths, weaknesses, opportunities, and threats (SWOT) analysis was conducted to assess risks associated with the impact of project design and implementation. This analysis reviewed factors both internal and external to the organization

that could influence implementation and sustainability of the quality improvement project.

These factors are outlined in detail below.

***Strengths.*** This quality improvement project was strongly supported by the project facility administrators. If successful, the project could reduce monetary penalties resulting from readmissions and hospital-acquired conditions associated with re-hospitalizations of the elderly. In addition, this project could improve the patient and family experience around transitions of care from inpatient hospitalization to SNF level care, and thereby positively impact measured service scores. The project could improve communications and quality of information exchange between hospitals and SNFs and ultimately improve relationships and patient safety. Ongoing data abstraction and analysis assistance was available for outcome measures to support project sustainability.

***Weaknesses.*** The utilization of existing staff resources could negatively impact project success and sustainability, as could the barrier of provider participation in design and ongoing monitoring efforts. Additionally, provider communication in general was a barrier in the project facility, making effective communication about new required processes challenging. The addition of required pharmacist-facilitated medication reconciliation, ECN consultation, and telephone handoff processes could negatively impact timely hospital discharge and transportation coordination processes. The project was implemented on one project facility inpatient unit, which could limit the scope of readmission penalty reduction. Lastly, while compliance monitoring for some aspects of the bundle could be done retrospectively through the electronic medical record, such as the presence or absence of a consultation, real-time compliance monitoring relied on a paper-based checklist (see Appendix D).

***Opportunities.*** Opportunities existed to expand the scope of the project within the project organization, and to share successes with other network hospitals within the health system. There was also an opportunity to disseminate project results through publication, poster, and podium presentations. Opportunities also existed to solicit feedback and ongoing input from non-partner SNFs within the community.

The project facility had an opportunity to more appropriately analyze and report readmissions data going forward. There were limited descriptive data available. The project facility had historically only reported mean admissions per month. No context relative to total number of cases and standard deviations were provided on a regular basis. This improved with the resumption of the Readmission Committee functions associated with the project. Committee reports going forward included measures of central tendency.

***Threats.*** Nursing staff turnover and extended time to fill vacancies presented the most significant threat to project success. The project organization had a 3% nursing vacancy, and a 10% nursing turnover rate, which included all positions within the nursing scope of services (Wilkes Medical Center [WMC], 2019). The project required additional duties for existing pharmacy, nursing, and care coordination staff to absorb, exacerbating the impact of position turnover. The partner SNF was in discussions with a purchasing partner. It was unclear whether ongoing participation in the project was possible.

**Organizational approval process.** Data pertaining to overall readmissions, and the percent occurring from SNFs, were presented to the project facility President and Chief Financial Officer in a regularly scheduled update meeting. Proposed project ideas were discussed, and framed in terms of monetary penalties, patient experience, and community relationships. Unanimous support for implementation was received, with the understanding that no incremental

staffing resources be used. Final approval was provided by the project facility President (see Appendix E).

**Information technology.** The project organization's electronic medical record (EMR) was utilized to obtain the following information: baseline and ongoing readmission data, case finding, admission source for demographic purposes, and ongoing monitoring for compliance. The health system in which the project facility is a network hospital utilizes the Epic™ platform for clinical and financial management. Custom and standard reports available in the EMR and through the Information Technology Services department were utilized for data and demographic analyses.

As project results were disseminated throughout the health system, the potential existed for decision-support alert mechanisms to be created within the EMR. The health system of which the project facility is a part only supported EMR enhancements for *system-level* utilization versus utilization in just one system facility. Since the project scope did not include system-level implementation, limited ability existed to utilize these mechanisms within the project facility; however, the capability existed to leverage technology for system-level adoption. Recommendations were included during results dissemination that outlined the benefits of decision support mechanisms to support this improvement in the care of the SNF population.

**Education plan.** Discharge bundle education was provided to all staff working on the project unit, all Care Coordination staff (to include the ECN), and all pharmacy staff prior to pilot implementation. Project unit education was provided at four regularly scheduled staff meetings on day and night shifts. An attendance roster was used to assure all staff received education prior to the start of the project. A Power Point presentation, based on the education outline (see Appendix F), was used for education sessions, and then loaded on a unit desktop for

future reference. Pharmacy and Care Coordination were provided the presentation by email to satisfy their education requirements. The project manager's contact information was provided for follow up questions. The education outline was developed using the Revised Iowa Model and PDSA methodologies.

### **Cost Analysis of Materials Needed for Project**

Costs associated with the implementation of this project were mainly nursing salary costs relevant to project implementation team participation and nursing staff education. Education costs assume staff on the project implementation unit were paid one incremental hour in salary for off-duty attendance at a one-hour education session. Implementation team participation costs assume six hours of incremental salary for meeting time for non-exempt staff during planning and implementation. Project details and instructions were provided as an easily available resource for staff electronically on unit desktops. No materials costs were incurred (see Appendix G).

As discussed in Chapter One, the project facility incurred approximately \$970,000 in penalties directly associated with hospital readmissions between 2015 and 2018. During that same period, the organization demonstrated 1,105 (all-cause) 30-day readmissions, with a mean of 23.2 and a standard deviation of 6.78 (WMC, 2018). For every readmission prevented, the project facility saves approximately \$877 in penalty avoidance. If the project can reduce three readmissions, the cost/benefit ratio is 1.25, indicating a positive return on investment (ROI) for the organization.

### **Plans for Institutional Review Board Approval**

All procedures in this project were approved by the project facility Institutional Review Board (IRB) and the University IRB. All identifiable information collected during this project

was handled confidentially and in accordance with project facility IRB policies and procedures. A waiver of the requirements for signed informed consent was requested and received as the project presents no more than minimal risk of harm to subjects and involves no procedures for which written consent is normally required outside of the academic context.

The project facility IRB process consisted of the submission of a study protocol, which included the title of the project, background of the problem, objectives of the project, methods and measures, specific interventions, outcome measures, consent methodology, data management and security methods, references, and copies of project data collection and evaluation tools. Additionally, the project facility IRB required completion of the Biomedical Investigators Basic Course as included in the Collaborative Institutional Training Initiative (CITI). Upon the completion of the stated requirements, project facility IRB review was conducted and exempt status approval was received (see Appendix H). Project facility IRB approval documentation was presented to the University IRB for review and approval. The University IRB reviewed and concurred with the facility IRB with exempt status and approval (see Appendix I).

### **Plan for Project Evaluation**

**Demographics.** Nominal demographic data were collected throughout the project. The Project Evaluation Tool, which was distributed to nursing staff in the project facility and the partner SNF, asked participants to report the name of the facility at which they were primarily employed, and their role (Registered Nurse [RN], Licensed Practical Nurse [LPN], Certified Nursing Assistant [CNA], or other). In addition, the name of the community SNF from which the patient was readmitted was collected. Staff demographic data were coded and reported in frequency and percentage distributions. Facility names were coded and collected biweekly and

were also reported in frequency and percentage distributions (see Appendix J). All demographic data results were displayed in table format.

**Primary outcome measurement.** The primary outcome measure for the project was to decrease the percentage of readmissions originating from SNFs, defined as all-cause, SNF readmissions divided by all readmissions multiplied by 100, expressed as a SNF readmission rate. These data were collected biweekly beginning with the pilot in December 2019 through the end of May 2020 (see Appendix J). Data were collected via the project facility EMR. Compliance was also measured by the use of the unit checklist. The number of completed checklists was compared to the number of SNF discharges as recorded in the project unit discharge log. Rounding was conducted on the project unit daily to support staff during the pilot and implementation phases and to monitor for bundle compliance.

**Evaluation tool.** A run chart was used to plot biweekly data points (numbers of readmissions from SNFs) to evaluate progress. A run chart is a simple line graph, plotting single measures over time. The purpose of this tool is to detect process improvement or decline by measuring data distribution and direction around the median. Runs analysis was also used to ascertain shifts and trends in process improvement (Anoj & Olesen, 2014; Perla, Provost, & Murray, 2011). The project evaluation goal of three readmissions was established in order to accomplish the three-readmission reduction for the project to achieve the organizational ROI over the span of the project (see Appendix K). Compliance was monitored daily by also comparing the numbers of SNF discharges to the number of completed discharge checklists.

**Data analysis.** Run chart analyses and descriptive statistics such as improvement percentages and frequencies were used to evaluate primary outcome data. Outcome data were compared for relative improvement by benchmarking with the project facility prior year



performance. The project facility is a member of the Vizient® Performance Improvement and Benchmarking Collaborative.

**Secondary outcome measurement.** The secondary project outcome was to increase nurse satisfaction with the SNF patient discharge process. An evaluation tool was developed and described below. An overarching project goal was also to improve relationships with area SNFs.

**Evaluation tool.** A project evaluation tool was developed using a four-item Likert scale for project participants and SNF stakeholders to indicate satisfaction with key project components before and after project implementation. Items in the questionnaire included completeness and clarity of hospital-provided discharge information, quality and relevance of medication reconciliation, quality and relevance of verbal handoff communication, availability of post-discharge hospital resources, and workload associated with the discharge bundle process. Survey participants were asked to rate each key component as either very satisfied, satisfied, unsatisfied, or very unsatisfied (see Appendix L). The questionnaire was administered to project participants and stakeholders twice, once prior to project implementation and again after project completion. REDCap survey software was utilized to distribute surveys to project facility participants in order to assure anonymity of respondents. In order to assure anonymity of responses, respondents were instructed to create a unique survey identification code that could be linked to the second questionnaire.

**Data analysis.** The first set of satisfaction questionnaires established a baseline score. The target for process satisfaction was to maintain or improve current satisfaction levels from baseline. Questionnaires were analyzed and reported using response rates, frequency, and percentage distributions. Results were displayed in bar graph format. Questionnaire outcomes were disseminated to SNF stakeholders and project facility participants after project completion.

**Data management.** The project manager was responsible for collecting, filing, storing, and properly disposing of all project-related documents and data as required by federal and state law and project facility policy (Wake Forest Baptist Medical Center [WFBMC], 2017). Access to project-related information was controlled to prevent unauthorized use, disclosure, removal or destruction of records. Project data and electronic information were stored on a project-facility approved, encrypted data drive. The drive was secured in a locked drawer within a locked office. Access to the locked drawer was restricted to the project manager.

Demographic survey data were linked and coded to protect stakeholder and project facility participant anonymity. Names of primary places of employment were coded as follows: A- project facility and B-stakeholder SNF. Participant and stakeholder roles were coded as follows: 1-RN, 2-LPN, 3-CNA, and 4-other. Readmission facility information was also gathered, and in order to maintain facility anonymity, these data were coded. The three community SNFs were coded as X, Y, and Z. Coded data were entered into a spreadsheet for analysis.

In compliance with project-facility policies and procedures, project records will be retained for three years after the completion of the project. Destruction of paper records will be carried out using the confidential shred process in place at the project facility. Destruction of electronic data will be facilitated by the project facility Information Technology Services department, in compliance with facility policy (WFBMC, 2017).

**Summary**

In conclusion, this chapter detailed critical information related to pre-implementation planning. Project management components discussed included organizational readiness and a SWOT analysis to assess organizational risk. A cost/benefit ratio was calculated, and the IRB request and approval processes were outlined. Project evaluation methodologies were discussed and data integrity, storage, and destruction mechanisms were delineated.

## **Chapter Five: Implementation Process**

This chapter details the steps in the planned implementation of this quality improvement project. Variations and refinements to the original implementation made during ongoing Plan, Do, Study, Act (PDSA) cycles are detailed. Project participants were described and recruitment procedures explained. The project facility and project unit settings are described.

### **Setting**

The facility in which this project was implemented is a community network hospital, affiliated with an academic health system, located in northwest North Carolina. The facility was constructed in 1952, is licensed with the state of North Carolina for 120 acute inpatient beds and ten post-acute rehabilitation beds, and employs over 600 full and part-time employees. The service area is comprised primarily of the county in which the facility is located and includes portions of three contiguous counties. The average daily census is 35, to include two live births per day.

The scope of health services includes inpatient and outpatient surgery, emergency care, an adult inpatient hospital medicine program, outpatient infusion services, intensivist-supported critical care services, women's services, and a full complement of ancillary and support services. There are five provider-based ambulatory entities providing diagnostic imaging, wound management, cardiac and pulmonary rehabilitation, sleep medicine, and cardio-vascular services. Surgical services provided include adult and pediatric orthopedic, general, obstetrical and gynecology, ophthalmology, dental, and otolaryngology. The facility is a non-profit, public organization fully accredited by The Joint Commission and qualifies for all conditions of participation under the Medicare and Medicaid programs.

The project unit was a 40-bed inpatient, adult hospital medicine unit with an average daily census of 20. The unit's patient population included patients with cardiac and respiratory conditions, complications from diabetes, sepsis, neurological conditions, and complications associated with substance use. This unit also provided care for outpatient clinic-type patients for infusion therapy, wound care, and medication management, and employed approximately 30 Full-time equivalents (FTE) consisting of staff registered nurses (RN), certified nursing assistants (CNA), unit secretaries, charge nurses (CN), and one nurse manager (NM).

### **Participants**

Project participants included all nursing staff employed on the project unit, RN case managers, the Enhanced Care Nurse (ECN), pharmacists, and pharmacy technicians. The Project Implementation Team participants included a project unit charge nurse, one project unit staff nurse, the lead unit secretary, the site champion, a RN case manager, a social worker, a pharmacist, the facility quality manager, the ECN, and the project manager. Participants were selected based on expertise required for the successful implementation and sustainability of the project, and were all employed by the project facility. Participants represented varying levels of skill, competence, experience, and tenure with the organization. There was no exclusion from participation based on age, gender, or ethnicity. Completion of the pre and post implementation evaluation questionnaires was strictly voluntary.

### **Recruitment**

Project feasibility was discussed with department leaders from Care Coordination, Pharmacy, and the site champion prior to Implementation Team launch. The project was deemed to be feasible and easily incorporated into the existing work of their respective teams. Support for project outcomes and commitment to participate in project activities was received. Further

support and commitment were received for recruitment, Implementation Team participation, education compliance assistance, and project compliance monitoring as needed.

Implementation Team members were recruited based on their roles in the organization and the expertise needed for project success. A calendar invitation was sent to prospective team members with a brief explanation of the purpose and expected duration of team activities.

Implementation Team invitees expressed interest in the team, agreed that a gap existed with the quality of skilled nursing facility (SNF) discharges, and were generally enthusiastic about the project.

Project unit team members were selected based on their work location and job roles, as the preponderance of SNF discharges took place from the project unit. All staff working on the project unit, to include contract nursing staff, were recruited as participants when unit education occurred. Their roles and responsibilities were explained.

### **Implementation Process**

Project implementation began with the formation of the Implementation Team. This team was charged with oversight of the project, to include critically analyzing project design and providing input for improvement, soliciting support and compliance from their respective teams, monitoring project progress and outcomes, and participating in PDSA cycles. This team was charged to meet weekly until the pilot launch, then at least bi-weekly thereafter. To hardwire results, the Implementation Team transitioned into the Readmissions Team, to monitor and report monthly readmissions and recommend actions for improvement on an ongoing basis. Education was provided to the team regarding the discharge bundle, outcomes data and monitoring, and the responsibilities of each team member role in bundle compliance (see Appendix M).

The project implementation process was as follows:

1. Patients admitted from a SNF and patients to be discharged to a SNF were identified.
2. A checklist was initiated for each patient.
3. Bedside nursing staff and the ECN worked through the checklist to assure each item was addressed.
4. ECN and project unit secretary collected the checklists at patient discharge.
5. ECN provided data to project manager and Implementation Team and kept a copy to track readmissions.
6. If a readmission occurred, the ECN linked the index admission and the readmission on the checklist.
7. The ECN contacted each SNF post-discharge to ascertain needs.
8. Readmissions from SNFs were collected and placed into the project run sheet every two weeks.

Beginning January 2, 2020, a small-scale pilot was launched on the project unit for ten days to test the integrity and feasibility of project design. On the day of pilot launch, the project manager, the site champion, and the ECN were scheduled on the unit to identify eligible patients, assist staff with the bundle process, assure appropriate consultations took place, and assure checklists were completed and collected. The project manager rounded daily during the pilot course to support staff and providers. Pilot data were collected, to include completed checklists, readmission information, and participant feedback. The Implementation Team underwent PDSA cycles weekly during the pilot, made revisions based on feedback, and prepared for the full-scale implementation of the project. The Implementation Team took feedback from the pilot and

made adjustments to the checklist to better align with staff workflow. Rather than requiring staff to contact pharmacy directly, staff.

Staff education was conducted prior to pilot launch. Project unit staff were educated during two regularly scheduled staff meetings, including both day and night shifts. A Power Point Presentation was used to provide background information into the problem, description of the Implementation Team and its role, description of the components of the discharge bundle, roles of each team member, documentation and disposition requirements, and information about the pre and post evaluation questionnaires. A total of 36 project staff (72%) were educated at the sessions. Staff unable to attend the education sessions were provided a copy of the presentation loaded to unit desktops. The project manager and site coordinator reinforced learning through project rounds.

Prior to implementation, staff were asked to complete a staff satisfaction questionnaire (see Appendix L). The project was implemented over a six-month period, which included the pilot. The project manager rounded frequently for support and to assure bundle compliance and collect bundle checklists. Completed checklists were compared to the discharge log to determine compliance. Readmissions data were to be obtained bi-weekly and reported to the Implementation Team for PDSA cycle activities. At the conclusion of the project, staff were asked to complete the same staff satisfaction questionnaire. Pre and post implementation questionnaires were analyzed to determine the impact the project had on staff satisfaction with the SNF patient discharge process. Full project implementation began on January 20, 2020.

### **Plan Variation**

Several variations to the project plan occurred during implementation. There were difficulties with the availability of readmissions data. Reports available in the EMR were not



granular enough to obtain the bi-weekly overall readmission numbers as originally planned. The decision was made, in collaboration with the Implementation Team, to collect manual bundle checklists to gauge SNF readmissions during implementation and utilize monthly overall readmission data for final outcome data per the original plan. No changes were made to the data integrity and storage plan.

The partner SNF was sold during project implementation. Facility leadership changed and access to SNF staff was limited. Post-implementation satisfaction data were not available from the SNF staff at project completion.

Education, pilot, and implementation timelines had to be revised to accommodate for high patient volume and staff illnesses during influenza season. Rather than educating staff in mid-December and launching the pilot at the end of December, education took place at the end of December; however, readmissions data were collected for December and included in the final project data analysis. The pilot launched in the beginning of January and lasted ten days versus the original two-week time frame. Full project implementation occurred in mid-January rather than earlier in the month as originally planned.

The post-discharge phone calls to SNFs did not occur as planned. The ECN found that it was difficult to connect with a SNF caregiver, contributing to multiple phone transfers and lengthy holds. The discharging project unit nurse at handoff provided the ECN's phone number, and the team found that this number was utilized frequently and met the intent of the original project plan.

Lastly, as a result of healthcare impacts from the Coronavirus pandemic, inpatient admissions, discharges, and readmissions on the project unit were lower than expected. As a result, variable staffing reductions were required. In addition, in response to sharp organizational

revenue declines, mandatory 4-week furloughs were instituted in May 2020. These furloughs, which impacted the ECN, the site coordinator, and the project manager, along with the variable staffing reductions, likely contributed to gaps in data collection.

### **Summary**

The project was implemented on January 2, 2020 for a ten-day pilot period. Information and feedback gathered during the pilot period was used to refine full project implementation on January 20, 2020, and project readmission data were collected through May 31, 2020. SNF and overall hospital readmission data were collected for primary project outcome. Secondary project outcome data were revised to exclude partner SNF questionnaires from both pre- and post-implementation measurements.

## **Chapter Six: Evaluation of the Practice Change Initiative**

The defined quality improvement project spanned five months, incorporated practice and process adjustments across five disciplines, and multiple organizations. Process improvements centered on improving the quality and experiences of skilled nursing facilities (SNF), hospital patients discharged to SNFs, and hospital readmission metrics. The satisfaction of hospital nursing staff with the SNF discharge process was also assessed.

### **Participant Demographics**

Project participants were hospital nursing staff employed on a 26-bed, general medical unit in a mid-sized community hospital. Available demographic data housed within the organizational Human Resources repository were used for demographic breakdown (see Table 1). There were 50 total participants in the project unit, evenly distributed between registered nurses (RN) and unlicensed patient personnel. The site coordinator and Enhanced Care Nurse (ECN) were also instrumental to the project. Employees who were on leaves of absence (LOA) were not participants for the entirety of the project; however, had early involvement in planning and implementation and therefore were included in the demographic analysis.

Table 1

*Project Participant Demographics*

Characteristic	n	%
<b>Gender</b>		
Female	45	90
Male	5	10
<b>Employment Type</b>		
Full-time	40	80
Part-time	8	16
LOA	2	4
<b>Role</b>		
RN	25	50
CNA I	14	28
CNA II	11	22

*Note.* RN = Registered Nurse; CNA = Certified Nursing Assistant I, II = CNA scope of practice; LOA = leave of absence.

**Intended Outcomes**

The purpose of the project was to decrease the hospital readmission rates of SNF patients on the project unit by implementing a discharge bundle of nurse-led interventions. The primary outcome measure was to decrease the percentage of project unit readmissions originating from SNFs, defined as all cause SNF readmissions divided by all readmissions, multiplied by 100, and expressed as a SNF readmission rate. The secondary project outcome was to increase staff satisfaction with the hospital discharge process for SNF patients across the continuum of care. The original project design measured satisfaction with a pre and post-implementation questionnaire distributed to hospital project participants in addition to participants in a partner SNF. During the course of implementation the partner SNF was sold and access to SNF staff was limited. Therefore, partner SNF participant responses were removed from pre-implementation questionnaire and were not included in the post-implementation questionnaire.

## Findings

**Readmissions findings.** Readmissions data were gathered on the project unit for six full months, with pre-project data from December 2019 collected and included for reference (see Table 2). SNF readmissions to the project unit were collected by the ECN using the comments section in the Project Bundle Checklist (see Appendix D). Using this method, SNF readmissions to the project unit were able to be distinguished from SNF readmissions to hospital units not within the project scope. The overall readmissions data reports, generated from the electronic medical record (EMR), did not distinguish the hospital unit on which the readmission occurred.

Overall hospital readmissions data during the project period were collected using reports obtained from the EMR. These data, along with data collected on the project unit were used to establish SNF readmission percentages and rates for each month of the project period (see Table 2). It is important to note that during the course of the project, the Coronavirus pandemic dramatically decreased hospital census, beginning in mid-February 2020, and likely contributed to lower readmissions than had been measured historically, and also likely contributed to higher than expected SNF readmission percentages.

Table 2

*Project Unit Skilled Nursing Facility (SNF) Readmissions Compared to Overall Readmissions*

Month	Overall Readmissions	SNF Readmissions	% SNF Readmissions (rate)
December	31	6	19 (.19)
January	24	1	4 (.04)
February	12	2	17 (.166)
March	10	6	*60 (.6)
April	12	3	**25 (.25)
May	12	2	17 (.166)

*Note.* Reductions to overall readmissions related to overall decreases in admissions and census related to COVID-19. \* = one patient = four readmissions; \*\*one patient = two readmissions.

A run chart was used to monitor project unit readmissions data during the course of the projects implementation period (see Figure 1). The project goal of three readmissions was established based on the financial impact to the organization and prior year organizational performance. The December 2019 data point was included to establish a reference point for the launch of the project. All data points gathered during the project were at or below the established goal, indicating positive performance of the project (see Figure 1); however, the lack of a trend or shift indicated random variation. A shift is defined as six or more consecutive data points either above or below the median, and a trend is five or more consecutive data points going in the same direction. The project run chart contained ten data points during the course of the project. Ten data points is considered acceptable to gauge progress of a quality improvement project (Etchells & Woodcock, 2018). It is questionable whether to consider data points on the median in trend or shift determination. For the data analysis in this project, data points on the median were included when counting runs; however, this did not contribute to a trend (Etchells & Woodcock, 2018; Perla, Provost, & Murray, 2011). While the run chart analysis demonstrated a downward directional performance in SNF readmissions over the course of the project, only three of the five project months demonstrated a lower SNF readmission rate than the prior year baseline readmission rate of 20%.

*Run Chart Monitor of SNF Readmissions on Project Unit*

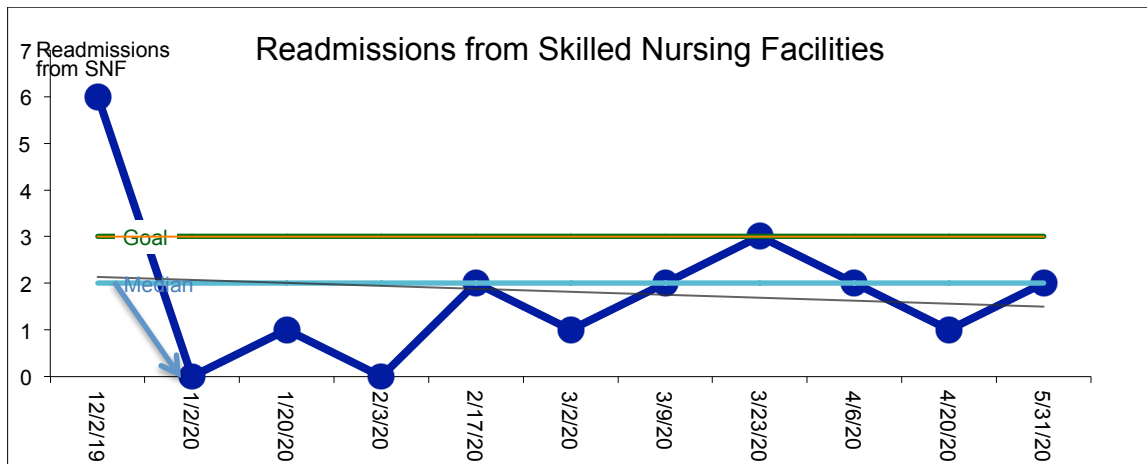


Figure 1. Arrow = project implementation; blue line = median readmissions during project; grey trend line indicates direction of performance.

Using the Bundle Compliance Checklists, the implementation team collected data for 100 unique patient encounters, with 14 readmissions occurring from this cohort. Six of those encounters were from two patients who experienced multiple readmissions immediately prior to Hospice referrals. This represented a 0.14 (14%) SNF readmission rate on the project unit, which is under the prior year baseline, again supporting a positive project outcome of a 6% reduction in readmissions.

Trends in SNFs from which readmissions occurred were tracked during the course of the project by the ECN using the comments section of the Bundle Compliance Checklist. The referral area for the project facility is comprised of three SNFs. One referral SNF contributed to 50% of readmissions during the project, which provided improvement and collaboration opportunities for the future. Post-discharge phone calls to SNFs by the ECN were ineffective, primarily due to extended time on hold waiting for clinical staff to respond to the call. The inclusion of the ECN’s phone number in the scripted handoff was effective. Staff from SNFs

used that number regularly for questions, concerns, and access to resources in order to potentially avoid a hospital transfer.

The ECN reported 153 Emergency Department (ED) patient encounters during the course of the project. The implementation/readmissions team, the ECN, and ED providers assert that the presence of the ECN in the ED made a positive impact relative to SNF readmissions. Prior to the project, there was no role in the organization that performed ED consultations in the care coordination/readmissions space, therefore the path of least resistance for an ED provider was to admit a SNF patient with resource needs versus committing the time necessary to obtain needed resources on an outpatient basis, to include within the SNF itself. Examples of resource needs include, but are not limited to, the need for intravenous antibiotics; low-to-mid-level respiratory interventions such as nebulized medications, oxygen requirements, and oxygenation monitoring; or uncomplicated wound care needs.

**Satisfaction findings.** An electronic questionnaire was distributed by email prior to the start of the pilot to hospital project unit staff and partner SNF staff (see Appendix L). An identical questionnaire was distributed after the conclusion of the project. The questionnaire included items pertaining to the completeness and clarity of hospital-provided discharge information, quality and relevance of medication reconciliation, quality and relevance of verbal handoff, and workload associated with the hospital discharge process. A section for comments was provided.

There were 12 responses from the pre-implementation questionnaire; however, two responses were from the partner SNF and therefore were excluded (see Table 3). After exclusion, the response rate was 20%. Pre-implementation questionnaire responses indicated



100% of respondents were either satisfied or very satisfied with hospital SNF discharge processes. Staff provided no comments.

The post-implementation questionnaire was distributed to participants by email, omitting partner SNF participants. Partner SNF participants were not included in pre-implementation questionnaire distribution due to the sale of the facility immediately prior to project implementation, therefore also removed from post-implementation questionnaires. The response rate for the post –implementation questionnaire was low. In addition to the initial email containing the questionnaire, the site coordinator sent one additional email reminder for completion. There was one post-implementation questionnaire response, for a response rate of 2%. The low response rate was likely due to reduced work hours or project unit staff as a result of low inpatient hospital census during the COVID pandemic. The sole respondent was satisfied with post-implementation hospital SNF discharge processes; yet, no comments were provided.

Table 3

*Pre and Post-Implementation Staff Satisfaction Questionnaire Responses*

		Responses			
		1. Completeness/clarity (%)	2. Med. Rec. (%)	3. Handoff (%)	4. Workload (%)
Pre Imp (n = 10)	Very Sat	3(30)	Very Sat 2(20)	Very Sat 4(40)	Very Sat 3(30)
	Sat	7(70)	Sat 8(80)	Sat 6(60)	Sat 7(70)
	Unsat	0(0)	Unsat 0(0)	Unsat 0(0)	Unsat 0(0)
	Very Unsat	0(0)	Very Unsat 0(0)	Very Unsat 0(0)	Very Unsat 0(0)
Post Imp (n = 1)	Very Sat	0(0)	Very Sat 0(0)	Very Sat 0(0)	Very Sat 0(0)
	Sat	1(100)	Sat 1(100)	Sat 1(100)	Sat 1(100)
	Unsat	0(0)	Unsat 0(0)	Unsat 0(0)	Unsat 0(0)
	Very Unsat	1(0)	Very Unsat 0(0)	Very Unsat 1(0)	Very Unsat 0(0)

*Note.* Pre and post-implementation survey provided in full in Appendix L. Med. Rec. = medication reconciliation.

**Summary**

Overall performance of the project was positive, with the SNF readmission rate of the project unit being lower than the established prior year baseline measure. Hospital census and admissions were impacted as a result of COVID-19, and presented challenges for the project unit staff. Staff satisfaction questionnaires prior to project implementation indicated overall satisfaction with the hospital SNF discharge process, making satisfaction improvement challenging. Implications for practice will be discussed more comprehensively in the following chapter.

## **Chapter Seven: Implications for Nursing Practice**

The American College of Schools of Nursing issued eight foundational competencies critical to the utility and value of Doctoral Education for Advanced Nursing Practice. The purpose of these competencies, or Essentials, was twofold: to guide curriculum development for advanced Doctoral-nursing education; and to guide students in the attainment of elements critical to advanced nursing practice (American College of Schools of Nursing [AACN], 2006; Walker & Polancich, 2015). These elements drive the practice-focused scholarly work of the advanced practice registered nurse. This chapter discusses the implications for nursing practice, with the specific focus on the AACN Essentials of Doctoral Education for Advanced Nursing Practice.

### **Practice Implications**

The findings of this scholarly project suggested implications for furthered nursing practice in all of the Essential categories. There are implications directly related to project findings, and there are implications related to the overall evidence-based practice (EBP) approach, introduced as a framework for this project, to quality and process improvement. Exposing nursing staff to EBP and guiding them in the utilization of EBP models has utility across project-types and process improvement initiatives. This framework positions nursing staff to effectively design policies, procedures, and other care processes that are grounded in evidence.

**Essential I: Scientific underpinnings for practice.** Essential I refers to the ability to gain knowledge from scientific and academic sources and translate the evidence to practice and care delivery models (AACN, 2006). The findings of this project suggested that leading a more widespread effort to train nursing staff in the use of EBP to design and implement care delivery models could yield successful outcomes for patient populations. Examples of a more broad effort could include, teaching the nursing Policy and Procedure and Practice Committees how to

organize thinking and approaches to policy and practice changes, training nursing staff on how to find and interpret evidence, and leading teams to apply that scientific knowledge to their practice. Resources are needed to support EBP, such as access to online literature databases, training to understand search methodologies, education to interpret findings, and knowledge to appropriately select policies and practices with sound evidence. Future organizational competency development and measurement programs should include EBP as a standard expectation for nursing practice.

**Essential II: Organization and systems leadership for quality improvement and systems thinking.** Essential II details the requirement for advanced practice nurses to collate knowledge and skill sets, systems and organizational thinking, and process/project management to improve outcomes for target populations (AACN, 2006). Findings from this project suggest that providing teams with the knowledge and skills to build relationships with community partners to address patient populations in a systematic way could be a successful strategy to address care across settings. For example, the care of the skilled nursing facility (SNF) patient population should be addressed across the continuum of care, which will include staff and providers in both the SNF and the hospital. These teams often do not work together and, as the literature review indicates, often work in opposition to each other. Building relationships and understanding the context of each other's practice settings and requirements can build the systems thinking necessary to improve health and experience of SNF patient populations across the continuum of care. Relationships with the partner SNF informed project design and contributed to the overall positive results of the project. Leaders should create value in this activity, and create environments where these relationships can be cultivated.

**Essential III: Clinical scholarship and analytical methods for EBP.** Essential III explains that the basis for nursing practice should be rooted in scholarship, to include understanding of organizational operations, policy-making, and change management (AACN, 2006). EBP models are useful tools to guide teams in organizing their thinking around grounding practice in evidence. Quality improvement, policy and procedure, and process improvement teams require guidance and tools to frame their work. Using a simple EBP model, such as the Revised Iowa Model for EBP, can be demystify the idea of EBP by giving a road map to each step in the process. Leaders should encourage and support efforts to disseminate findings of quality improvement outcomes.

**Essential IV: Information systems/technology and patient care technology for the improvement and transformation of healthcare.** Essential IV explains the requirement for understanding the use of information technology systems and patient care technology to provide leadership in patient care and other healthcare settings. This includes, programs of care, budgetary and labor productivity tools, decision support mechanisms, and internet-based tools and technology (AACN, 2006). Implications for practice included assuring education and training mechanisms are available for leaders/staff in the use of these technologies in order to produce data to evaluate outcomes and cost impacts of care delivery systems. Findings from this project suggested that data mining from electronic medical records (EMR) was not intuitive or easily accessible. Resources should be made available to support nurses in this effort. Nursing staff should also understand how to design and utilize decision support technology housed within the EMR to optimize patient care and ease of data retrieval.

**Essential V: Healthcare policy for advocacy in healthcare.** Essential V outlines the requirement for understanding how to use advocacy to influence healthcare policy to improve the

care of populations. Advocacy can take place at the local, professional organizational, or governmental levels (AACN, 2006). Building relationships with local SNFs and advocating for evidence-based care along the continuum, to include movement between SNFs and inpatient hospitals, is important for nurses at all levels to be able to accomplish. Developing and conducting regular meetings and other activities with hospital and SNF staff is one practice implication from the findings of this project.

**Essential VI: Interprofessional collaboration for improving patient and population health outcomes.** Essential VI outlines the requirements for students to understand leadership as it pertains to outcome achievement through inter-professional, collaborative teams (AACN, 2006). The project implementation team was comprised of professionals from bedside nursing, nursing leadership, pharmacy, and care coordination. While physicians and other providers were not members of the team, they were consulted and provided opportunities for feedback as the project was designed, implemented, and evaluated. Project outcomes were widely shared among professionals within the health system. Implications for nursing practice involve cultivating process management competencies and team facilitation skills among bedside nursing staff. Resources are needed for nurse-led teams for education and simulations around team facilitation, leading diverse teams, and shared goal-setting and outcomes achievement.

**Essential VII: Clinical prevention and population health for improving the nation's health.** Essential VII refers to the ability to recognize, define, and measure outcomes of populations; implement measures designed to improve the health and of populations; and focus on health promotion and disease prevention within the scope of nursing practice (AACN, 2006). The population served by this project was SNF residents and their families. This population was mostly comprised of the frail elderly population; therefore, project outcomes were designed to

maintain and improve the health and wellbeing of this population. Implications for nursing practice surround understanding the effects of hospitalization on the SNF population and designing evidence-based, hospital-focused interventions to mitigate harm associated with re-hospitalizations. Future nursing research and quality improvement should focus on hospital-based interventions for improving health in the SNF population, as little evidence existed in support of hospital-based quality improvement initiatives for this population.

**Essential VIII: Advanced nursing practice.** Essential VIII focuses on the ability to utilize scientific data to evaluate care delivery models, analyze health promotion efforts, and lead efforts to design interventions to promote individual and population health (AACH, 2006). Implications for nursing practice based on the findings of this project included the need for competency development in data acquisition and analysis to identify and solve patient care problems. Baseline data for this project indicated a substantial proportion of overall hospital readmissions occurred in the SNF population; however, there was little understanding of how to quantify the problem, search for evidence based solutions, and manage quality improvement for this population.

### **Summary**

The Essentials of Doctoral Education for Advanced Nursing Practice provides the framework for competency development for the advanced practice nurse. Each Essential focuses on a specific foundational aspect of core competency. This chapter provided an outline for how each Essential informed implications for nursing practice based on project findings.

### **Chapter Eight: Final Conclusions**

The outcome of this quality improvement project was the successful reduction of readmissions from Skilled Nursing Facilities (SNF) to the project unit. Through the successful application of a nurse-led readmissions reduction bundle, and most importantly, the addition of Enhance Care Nurse (ECN) consultations, SNF readmissions reduced by 6% as compared to the prior year. This indicates a positive organizational return on investment, and a valuable practice change to disseminate to all hospital inpatient units that discharge patients.

#### **Significance of Findings**

The run chart analyses performed throughout the project indicated positive project performance and a reduction in SNF readmissions to the project unit compared to prior year. There were sufficient readmission data points and bundle checklists to gauge performance in a rapid-cycle fashion and gauge improvement efforts, leading to confidence in project results (Etchells & Woodcock, 2018). The clinical importance relates to the return on investment of this project and the ease of implementation and scalability.

This was an inexpensive project, largely reimagining the work of current employees rather than incurring the expense of incremental personnel. For example, incumbent pharmacy, care coordination, and nursing personnel completed the bundle in lieu of their usual discharge practices. This had no negative impact on the satisfaction level of project unit staff.

Additionally, the reduction of SNF readmissions was aligned with the organizational goal of Medicare penalty avoidance.

The design of the bundle was easily implemented, could be scalable across project facility inpatient settings, and could be more broadly implemented within the health system. The bundle checklist was straightforward, and the workload did not contribute to an increased



workload on project unit staff. The education/training components did not contribute to increased organizational costs.

Lastly, this project demonstrated that alignment of work across the continuum of care did decrease the percentage of SNF readmissions to the project facility. The involvement of a community partner SNF in the design of the telephone handoff, the improved communication between project unit staff and SNF staff at hospital discharge, and the relationship building between the ECN, the project facility, and community SNFs contributed to positive project performance.

### **Project Strengths and Limitations**

The primary strength of this project included the involvement of project unit staff in the design, implementation, and evaluation of the project. Project unit staff took ownership in assuring adherence to the improvement process, data collection, and maintaining integrity of the process through comparison of bundle checklists to the unit discharge log. The utilization of the Revised Iowa Model evidence-based practice (EBP) methodology contributed to project unit staff and the implementation team developing skills in process improvement design, understanding how to curate and interpret evidence, and becoming facile in rapid-cycle Plan, Do, Study, Act (PDSA) quality improvement methodology.

A secondary strength of the project included potential decreases in Medicare readmissions penalties to the project facility if implemented in all nursing units. The ease of education and implementation of the project would contribute to rapid scalability. The bundle checklist would ease in the collection of further quality improvement data should the organization elect to broaden the scope and measure results.

The small-scale pilot conducted two weeks prior to full-scale project implementation was also a strength of the project design. This period allowed the implementation team to provide coaching to the project unit staff and obtain valuable feedback to make refinements to the bundle compliance checklist. The most impactful refinement entailed the ECN documenting SNF readmissions to the project unit on the checklist itself. This enabled the implementation team to distinguish SNF readmissions to the project unit, as the report from the electronic medical record was unable to delineate to which project facility unit the readmission was attributed.

There were several limitations identified for this project. The impact of the coronavirus on the project facility in the form of reduced admissions and hospital census likely had a unintended impact on the project outcome. SNFs were being encouraged by state health officials to severely limit hospital transfers and, as a result, were providing care within SNF facilities for patients with more urgent/acute needs than traditionally done. While an overall positive practice, and one, which is hoped will continue, this did impact the overall number of SNF readmissions by artificially reducing historic admission and readmission practices.

The coronavirus also impacted the on-site availability of many of the key stakeholders in the project process. The project manager, site coordinator, ECN, and pharmacy staff were furloughed for non-consecutive four-week periods during the project period and project unit nursing staff reduced hours as a result of the decreased hospital census. Project unit staff were able to continue distributing/collecting bundle checklists; however, key stakeholder oversight and consistency of bundle element completion were likely negatively impacted by these absences.

Another limitation to the project design was confidence in the documentation/data around which Emergency Department patient types the ECN consulted. The original project design was

for the ECN to conduct ED consults on SNF patients only during the project period. Over the course of the project, the ECN's presence in the ED led to additional consultation requests for non-SNF patients, and those data were not parsed to distinguish between SNF consultations and non-SNF consultations. While the presence of the ECN in the ED was valuable in avoiding SNF readmissions, there were no project data to support that. Lastly, while the project run chart indicated a positive downward direction of SNF readmissions, the inability to detect shifts or trends in the data suggested a potential for random variation.

### **Project Benefits**

Benefits of this quality improvement project included the introduction of an EBP methodology to nursing practice in the project facility and the reduction of variability in the discharge process for project unit patients discharged to SNFs. The most important benefit of the project was the demonstration that a nurse-led readmissions bundle could lead to reduced SNF readmissions if implemented on a larger scale. This finding further reinforced nursing's value in achieving the Institute for Healthcare Improvement's Triple Aim, particularly in reducing the cost of care (Whittington, Nolan, Lewis, & Torres, 2015).

### **Practice Recommendations**

This project highlighted the need for ongoing relationship building with community SNFs. One recommendation for further practice is the establishment of regular collaborative meetings between the project facility, which is the sole community hospital, and community SNF key stakeholders. This forum would be a space to share quality data, best practices, and ascertain what ongoing resources the hospital could provide to enhance the ability of SNFs to avoid hospital admissions. Data collected during the course of the project indicated that one SNF contributed to 50% of hospital readmissions. Better understanding of the resources in that

particular SNF would help to inform future improvement processes to mitigate unnecessary hospital admissions and ED transfers.

The numbers of repeat readmissions by just two patients indicated the need for enhanced Hospice consultations within the project facility. The ECN has an opportunity to rapidly identify barriers to Hospice and navigate SNF patients and their families through this emotional process. Establishing relationships and data collaborations with area Hospice organizations is recommended for the project facility going forward.

Dissemination of project design and findings is recommended within the project facility, within the health system of which the project facility is a part, and outside of the health system. Opportunities to present project findings at health system research events, to present findings to community SNFs, and to present the project in a professional publication, such as the *Journal of Nursing Administration*, are recommended. It is further recommended that project unit nursing staff be given opportunities to disseminate project successes at various health system nursing collaboratives.

Finally, it is recommended that the health system enhance the required nursing competencies to include EBP, and to include the adoption of the Revised Iowa Model as the official EPB methodology for quality improvement in nursing. This would include education to project facility nursing staff, skill development in literature searches, and how to obtain assistance from research librarians to obtain information and evidence pertaining to clinical problems. The project facility is a part of an academic medical center, and all employees have access to the medical library. This includes nursing staff at the project facility.

**Final Summary**

The Revised Iowa Model, the EPB methodology used in this project, is an excellent tool for nursing staff and leaders to establish a step-wise process to design quality improvement projects. It is easy to follow and understand, and guides the user through the quality improvement process from how to identify a clinical problem to how to design strategies to mitigate those problems. The positive engagement of project unit staff, and ultimately the success of this project, was due to the understandability and implementation of the Revised Iowa Model. This model makes EBP much easier to understand for staff who may not have been exposed to this concept, and can easily be implemented regardless of the scale of the clinical problem or the size of the project group.

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Appendix A

Literature Matrix

Article (APA Citation)	Level of Evidence (I to VII)	Data/Evidence Findings
Berkowitz, R., Fang, Z., Helfand, B., Jones, R., Schieiber, R. & Paasche-Orlow, M. (2013). Project reengineered discharge (RED) lowers hospital readmissions of patients discharged from a skilled nursing facility. <i>JAMDA</i> , <i>14</i> (10), 736-740.	Level VI (single intervention study with historical control)	Project RED reduced hospital readmissions from 18.9% pre-intervention to 10.2% post intervention ( $p < .05$ ) for patients in a SNF
Clark, B., Baron, K., Tynan-McKiernan, K., Britton, M., Minges, K., & Chaudhry, S. (2017). Perspectives of clinicians at skilled nursing facilities on 30-day hospital readmissions: A qualitative study. <i>Journal of Hospital Medicine</i> , <i>2</i> (8), 632-638.	Level VI (single qualitative study)	Five main themes emerging: (1) coordination between EDs and SNFs, (2) incompletely addressed goals of care, (3) mismatch between patient clinical needs and SNF capabilities, (4) important clinical information not effectively communicated by hospital, and (5) challenges in SNF processes and culture
Davidson, G., Austin, E., Thornblade, L., Simpson, L., Ong, T., Pan, H., & Flum, D. (2017). Improving transitions of care across the spectrum of healthcare delivery: A multidisciplinary approach to understanding variability in outcomes across hospitals and skilled nursing facilities. <i>The American Journal of</i>	Level VI (Delphi)	Discharge-verbal handover listed as the most important for improving transitions/decreasing potential readmissions, followed by accurate medication reconciliation and provider communication

<p><i>Surgery</i>, 213, 910-914.</p>		
<p>Gilmore-Bykovskiy, A., Roberts, T., King, B., Kennelty, K., &amp; Kind, A. J. H. (2017). Transitions from hospitals to skilled nursing facilities for persons with dementia: A challenging convergence of patient and system level needs. <i>The Gerontologist</i>, 57(5), 867-879.</p>	<p>Level VI single (qualitative study using Grounded Dimensional Analysis)</p>	<p>SNF nurses consistently identified three needs when managing the transition of PwD, (1) preparing the PwD for transition, (2) obtaining detailed personal and social history and developing individualized care plans, and (3) preparing an individualized environment prior to transfer</p>
<p>Hospital-snf collaboration cuts readmission rates: The essential guide to hospital-based care planning (2014). <i>Hospital Case Management</i>, 22(11).</p>	<p>Level VII (QI Project)</p>	<p>A hospital-led multidisciplinary team worked with partnering SNFs in their Accountable Care Organization (ACO) to do the following: (1) assisted with the implementation of INTERACT program initiatives, (2) educated physicians and other providers how to better manage high-readmission diagnoses, (3) educated nursing assistants to use INTERACT communication tools such as Stop and Watch and SBAR, and (3) post-hospital discharge follow up via weekly phone calls</p>
<p>Hsiao, Y., Bass, E., Wu, A., Richardson, M., Deutschendorf, A., Brotman, D...&amp; Berkowitz, S. (2018). Implementation of a comprehensive program to improve coordination of care in an urban academic health system. <i>Journal of Health Organization and Management</i>, 32(5), 638-657.</p>	<p>Level VII (QI project, expert analysis)</p>	<p>As part of a comprehensive readmissions reduction program, Johns Hopkins developed a collaborative of five local SNFs to: (1) develop discharge protocols for SNF patients, (2) develop handoff protocols from hospital to SNF and (3) develop communication protocols between hospital and SNF to include medication reconciliation, adequate protocol implementation and nurse training.</p>
<p>Huckfeldt, P., Kane, R., Yang, Z., Engstrom, G., Tappen, R., Rojido, C...Ouslander, J. (2018). Degree of implementation of the</p>	<p>Level II (secondary analysis from a RCT + convenience sample of volunteer SNFs)</p>	<p>SNF training and support for INTERACT implementation resulted in an 11.2% reduction in re-hospitalizations (<math>p &lt; .001</math>). N=65 SNFs</p>



<p>interventions to reduce acute care transfers (INTERACT) quality improvement program associated with <i>number of hospitalizations. Journal of the American Geriatrics Society, 66(9), 1830-1837.</i></p>		
<p>Kane, R., Huckfeldt, P., Tappen, R., Engstrom, G., Rojodo, C., Newman, D., Yang, Z., &amp; Ouslander, J. (2017). Effects of an intervention to reduce hospitalizations from nursing homes: A randomized implementation trial of the INTERACT program. <i>JAMA Internal Medicine, 177(9), 1257-1264.</i></p>	<p>Level I (RCT)</p>	<p>Of the 85 nursing homes (SNFs) participating, those that received implementation training and support did not demonstrate statistically significant reductions in hospitalization rates compared to control NH (net difference - 0.13/1000 resident days, <math>p=.25</math>), hospitalizations during the first 30 days after NH admission (-0.37/1000 resident days (<math>p=.48</math>), hospitalizations greater than 30 days post admission (-0.09/1000 res. days, <math>p=.39</math>), and ED visits without admission (0.02/1000 days, <math>p=.82</math>)</p>
<p>King, B., Gilmore-Bykovskiy, A., Rioland, R., Polnaszek, B., Bowers, B., &amp; Kind, A. (2013). The consequence of poor communication during transitions from hospital to skilled nursing facility: A qualitative study. <i>Journal of the American Geriatrics Society, 61, 1096-1102.</i></p>	<p>Level VI (single qualitative study using Grounded Dimensional Analysis)</p>	<p>Themes: SNF nurses rely heavily on written discharge communication. Nurses interviewed cited multiple inadequacies including consistent problems with medication orders, poor history, and inaccurate information regarding current health status</p>
<p>Kripalani, S., Theobald, C., Anctil, B., &amp; Vasilevskis, E. (2014). Reducing hospital readmission rates: Current strategies and future</p>	<p>Level I (systematic review)</p>	<p>The effect on readmission rates is related to the number of components implemented; single-component interventions are unlikely to reduce readmissions significantly</p>

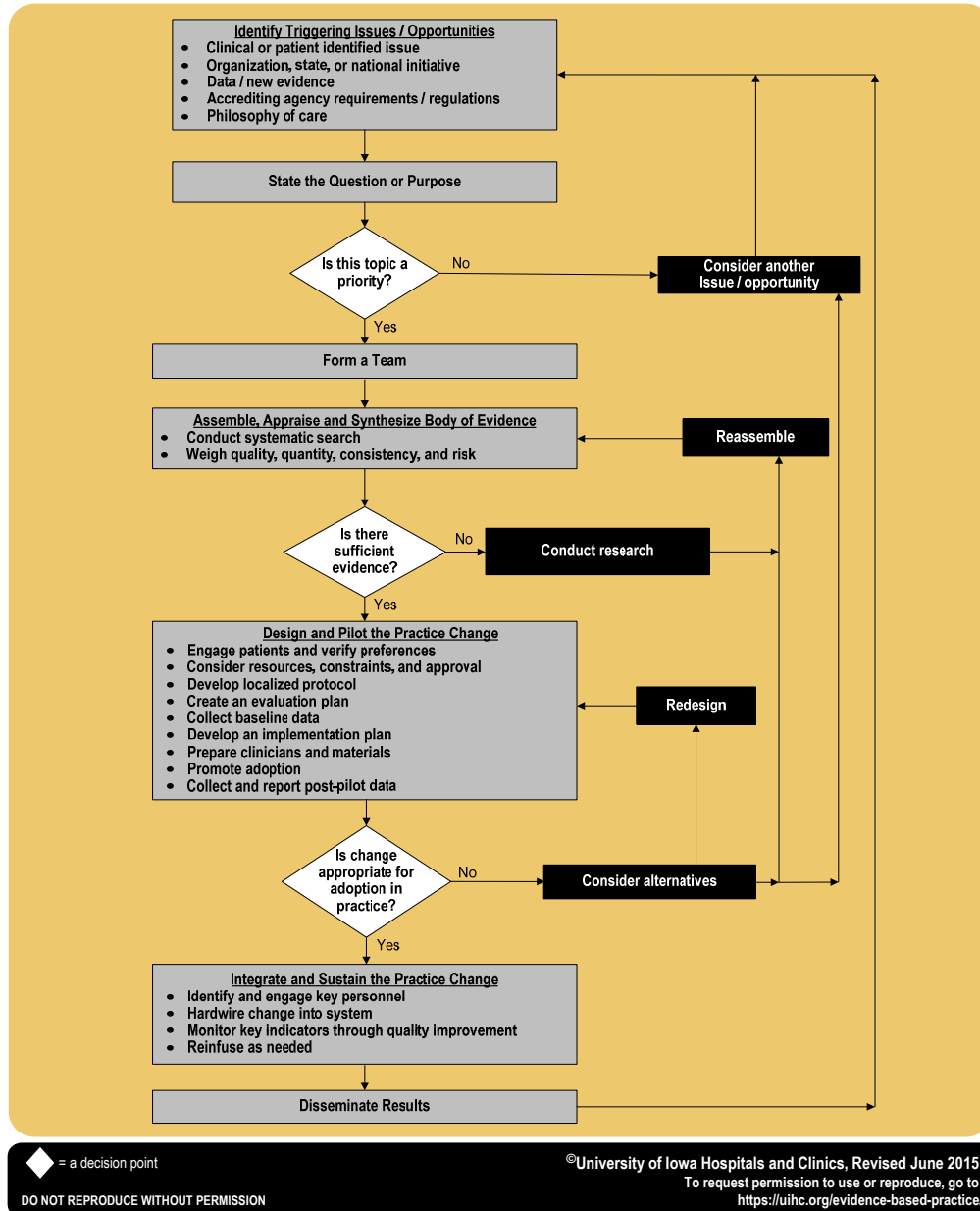
<p>directions. <i>Annual Review of Medicine</i>, 64, 471-485.</p>		
<p>Lamb, G., Tappen, R., Diaz, S., Herndon, L., &amp; Ouslander, J. (2011). Avoidability of hospital transfers of nursing home residents: Perspectives from frontline staff. <i>Journal of the American Geriatrics Society</i>, 59, 1665-1672.</p>	<p>Level VI (mixed methods review)</p>	<p>Staff rated 76% of readmissions as not avoidable. Common themes around readmissions were acute change in condition, family insistence, and MD order. SNFs using INTERACT were correlated with avoidable transfers (<math>r=0.41, p=.04</math>). No correlation between readmissions and facility characteristics were found, census (<math>r=0.09, p=.64</math>), on-site MD (<math>r=0.10, p=.60</math>), and PCPs (<math>r=0.27, p=.17</math>).</p>
<p>McHugh, J., Foster, A., Mor, V., Shield, R., Trivedi, A., Wetle, T... Tyler, D. (2017). Reducing hospital readmissions through preferred networks of skilled nursing facilities. <i>Health Affairs</i>, 36(9), 1591-1598.</p>	<p>Level VI (concurrent mixed methods design, combining Medicare claims data with structured interviews)</p>	<p>Hospitals that developed SNF networks saw a relative reduction from 2009-2013 that was 5% (95% CI: -8.1, -1.0) greater than hospitals without SNF networks</p>
<p>Minges, K., Britton, M., Clark, B., Ouellet, G., Hodshon, B., &amp; Chaudhry, S. (2019). Hospital readmission from skilled nursing facilities (SNFs): Perspectives of hospital and SNF providers [Research letter]. <i>JAMDA [in press]</i>.</p>	<p>Level VI (single qualitative study-interviews)</p>	<p>Hospital (n=25) and SNF (n=16) who participated in interviews identified three recurrent themes contributing to readmissions: (1) condition and acuity not appropriate for SNF capabilities, (2) Misaligned expectations among providers and families, and (3) strained inter-facility relationships. No study outcome data were provided</p>
<p>Ouslander, J., Parloe, M., Givins, J., Kluge, L., Rutland, T., &amp; Lamb, G. (2009). Reducing potentially avoidable hospitalizations of nursing home residents: Results of a pilot quality improvement project. <i>JAMDA</i>, 15, 162-170.</p>	<p>Level VII (QI project)</p>	<p>Use of the (pre-INTERACT) pilot tools were associated with a 50% reduction in readmissions in participating nursing homes (n=3)</p>

<p>Rachman, M., Gadbois, E. A., Tyler, D., &amp; Mor, V. (2018). Hospital-skilled nursing facility collaboration: A mixed-methods approach to understanding the effect of linkage strategies. <i>Health Services Research, 53</i>(3), 4808-4828.</p>	<p>Level VI (single descriptive study-interviews)</p>	<p>Hospital-SNF collaborations were more likely to reduce readmissions than hospitals that did not collaborate (11.3% readmission rate vs.15.4%). High collaborating hospitals were also more likely to discharge patient to a better quality SNF than low collaborating hospitals</p>
<p>Rosen, B., Halbert, R., Hart, K., Diniz, M., Isonaka, S., &amp; Black, J. (2018). The enhanced care program: Impact of a care transition program on 30-day hospital readmissions for patients discharged from an acute care facility to skilled nursing facilities. <i>Journal of Hospital Medicine, 13</i>(4), 229-235.</p>	<p>Level IV (observational, retrospective cohort analysis)</p>	<p>The Enhanced Care Program (ECP) demonstrated a 6% reduction in 30 day readmission rate (<math>p&lt;.001</math>), and ECP patients had lower odds of being readmitted within 30 days (<math>p&lt;.001</math>)</p>

Appendix B

Iowa Model Revised<sup>1</sup>

**The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care**



<sup>1</sup> From “Iowa Model of Evidence Based Practice: Revisions and Validation,” by Buckwalter et al. (2017), *Worldviews on Evidence-Based Nursing*, 14(3), p. 178. Used/reprinted w/ permission from the University of Iowa Hospitals and Clinics, copyright 2015. For permission to use/reproduce please contact the University of Iowa Hospitals and Clinics at 319-384-9098.

## Appendix C

## Skilled Nursing Facility Staff (SNF) Emerging Themes

<b>Theme</b>	<b>Staff Feedback</b>	<b>Plan</b>
Communication	<ul style="list-style-type: none"> <li>-Handoff from hospital staff often inadequate (not containing information useful to SNF, or omitting useful information)</li> <li>-Handoff does not occur consistently</li> <li>-Lack of call-back number for questions</li> <li>-Inconsistently available resource for questions</li> <li>-Requested patient information <u>prior</u> to hospital discharge in order to plan</li> </ul>	<ul style="list-style-type: none"> <li>-Incorporated scripted handoff into bundle design</li> <li>-Handoff design will include call-back number and name of consistently available resource person with access to electronic medical record</li> <li>-Incorporated SNF involvement in daily discharge huddles at hospital to provide more effective planning time for SNF</li> </ul>
Medication Reconciliation/Formulary Alignment	<ul style="list-style-type: none"> <li>-Frequently confusing (format of EMR)</li> <li>-Frequently inaccurate (discharge prescriptions do not match medication reconciliation)</li> <li>-Discharge prescriptions do not match SNF formulary, causing delays in care</li> </ul>	<ul style="list-style-type: none"> <li>-Incorporated into bundle design with pharmacist-led medication reconciliation and SNF formulary availability</li> </ul>
Access to electronic medical record (EMR)	<ul style="list-style-type: none"> <li>-Partnering SNF has access to limited information in hospital EMR, no paper copies provided at discharge (both positive and negative)</li> <li>-Only one designated staff member has access to EMR, which frequently causes delays in care</li> <li>-Limits access to information when designated person not available</li> </ul>	<ul style="list-style-type: none"> <li>-Did not incorporate into project design</li> <li>-Assisted to facilitate additional access to EMR on behalf of partner SNF</li> </ul>
Goals and expectations	<ul style="list-style-type: none"> <li>-Hospital providers (ED and inpatient) not familiar with services provided in SNFs, leading to inappropriate SNF admissions</li> <li>-Families not prepared for SNF environment</li> <li>-Families not aware of capabilities of SNF vs. hospital, leading to unnecessary hospital readmissions</li> <li>-Patients and families not aligned with goals of care at hospital discharge</li> </ul>	<ul style="list-style-type: none"> <li>-Incorporated into project design with Enhanced Care Nurse (ECN) consultation</li> </ul>

	-Families unaware of palliative care programs at SNFs	
Mutual respect	-SNF staff perception of belittlement from hospital staff -SNF staff perceived unappreciated for their experience and skill level	
Contributors to readmission	-Misalignment with care expectations of hospital discharging provider and SNF capabilities -Family instance despite appropriate resources and skills of SNF -Inappropriate SNF admissions (patient too acute for SNF setting) -Acute illness -Acute behavior change, endangering other SNF patients	-Incorporated into project design with ECN consultation

Appendix D

Bundle Checklist

Instructions: Complete the checklist below for each SNF discharge. Please also provide feedback in the space provided regarding the discharge bundle process. Give completed checklist to the unit secretary for future data collection. Please remember that this checklist contains PHI, so protect appropriately. Thank you

Patient Last Name: \_\_\_\_\_

Date of Discharge: \_\_\_\_\_

Check when Complete	Bundle Component
	Accurate Discharge Summary as completed by Hospitalist
	Pharmacy consulted for medication reconciliation
	Discharge prescriptions match medication reconciliation
	ECN consultation prior to discharge
	Phone handoff to SNF
	ECN phone number provided for resource

Comments/Feedback:

Appendix E

Project Organization Approval Letter



Date: July 5, 2019

To East Carolina University [Redacted]

We at **Wake Forest Baptist Wilkes Medical Center** have reviewed Susan Bachmeier's DNP Project Proposal "**Reducing 30-Day Readmissions from a Skilled Nursing Facility Through Implementation of a Discharge Bundle.**" Ms **Bachmeier** has organizational support and approval to conduct their Doctor of Nursing Practice student project within our institution. Our organization's liaison, or project champion, for the project is **Rhonda Jones, DNP, RN, WOCN.**

We understand that the timeframe for this project is from the date of this letter through August 1, 2020. Implementation at the project site will occur January 2020 through April 2020, unless otherwise negotiated. We understand that for Ms **Bachmeier** to achieve completion of the DNP program, dissemination of the project is required by the University and will include a public presentation related to the project and submission to the ECU digital repository, The ScholarShip. In addition, we understand that ECU College of Nursing encourages students completing exemplary scholarship to develop a manuscript for publication, but that is not a requirement. Our organization understands and agrees that the student will not use our organization's name in the formal project paper or any subsequent posters, presentations, or publications.

Our organization has deemed this project as a **quality improvement initiative.** Our organization is aware that this project will be processed first through our organizational approval process and then through the ECU College of Nursing process, which may include a formal review through University and Medical Center Institutional Review Board of East Carolina University (UMCIRB), if needed. Our organization **does** have an Institutional Review Board (IRB). We are aware that in the absence of an organizational IRB, the project will be submitted through the ECU College of Nursing review process which may include UMCIRB review if needed.

Thank you,

**Chad J. Brown** [Redacted Signature]  
*President, Wilkes Medical Center*

**Note: Must be the organization's executive/director or designee (someone with organizational authority)**



## Appendix F

## Staff Education Outline

- I. Describe Problem and Patient Population
  - A. National Data
  - B. Project Facility Data
  - C. Background
    1. Historical Data Collection/Reporting
    2. Readmissions Committee
    3. Evidence Reviewed
    4. Partner SNF Feedback
- II. Introduce Bundle
  - A. Problem Statement/PICO question
  - B. Organizational Priority
    1. CMS Penalties
    2. Quality of Care/Hospital Acquired Conditions
  - C. Describe Implementation Team
    1. Ongoing functions
      - a. Data analysis and reporting
      - b. PDSA cycle requirements
      - c. Transition to Re-Tooled Readmissions Team
    2. Membership

- D. Documentation Requirements
  - 1. Project Checklist
  - 2. Correct EMR Disposition Documentation
- III. Describe Discharge Bundle Components
  - A. Accurate Discharge Summary
  - B. Pharmacist-led Medication Reconciliation
  - C. Telephone Handoff
  - D. Enhanced Care Nurse Consultation
  - E. Project Scope
- IV. Bundle Process/Project Implementation
  - A. Pre and Post Implementation Evaluation
  - B. Pilot
  - B. Nurse-Led Inter-professional Consultation
  - C. Checklist
  - D. Daily Support Rounding
  - E. Documentation Requirements
- V. Sustaining Progress/Hardwiring
  - A. Ongoing Support Rounding
  - B. PDSA Cycle
  - C. Readmissions Team Participation
  - D. Disseminate Results
  - E. Add to Unit Orientation Process

Appendix G  
Project Budget

<b>Item</b>	<b>Quantity</b>	<b>Cost</b>	<b>Total</b>
<i>Stakeholder Feedback Cost</i>			
Snacks	2	\$30.00	\$60
<i>Project Design Costs</i>			
<i>Mean Team Hourly</i>			
Salary	5	\$29.00	\$145
Team Sessions	6		\$870
<i>Training Costs</i>			
<i>Mean Team Hourly</i>			
Salary	40	\$29.00	\$1,160
Class time	1		
<b>Total</b>			<b>\$2,090</b>

*Note.* Team salary cost limited to non-exempt members only.

## Appendix H

## Project Facility IRB Approval Letter

**MEMORANDUM**

**To:** Carolyn Huffman, D.Phil.  
Nursing Research

**From:** Brian Moore, Director  
Institutional Review Board

**Date:** 10/21/2019

**Subject:** Exempt Protocol: IRB00061084  
Reducing 30-Day Readmissions from a Skilled Nursing Facility Through  
Implementation of a Discharge Bundle

No protected health information will be used or disclosed in this research proposal; therefore the requirement for individual Authorization does not apply.

null (Category null).

Note that only the [REDACTED] IRB can make the determination for its investigators that a research study is exempt. Investigators do not have the authority to make an independent determination that research involving human subjects is exempt. Each project requires a separate review and approval or exemption. The Board must be informed of any changes to this project, so that the Board can determine whether it continues to meet the requirements for exemption.

[REDACTED] IRB is duly constituted, has written procedures for initial and continuing review of clinical trials; prepares written minutes of convened meetings, and retains records pertaining to the review and approval process; all in compliance with requirements of FDA regulations 21 CFR Parts 50 and 56, HHS regulations 45 CFR 46, and International Conference on Harmonisation (ICH) E6, Good Clinical Practice (GCP), as applicable. WFSM IRB is registered with OHRP/FDA; our IRB registration numbers are IRB00000212, IRB00002432, IRB00002433, IRB00002434, IRB00008492, IRB00008493, IRB00008494, and IRB00008495.

WFSM IRB has been continually fully accredited by the Association for the Accreditation of Human Research Protection Programs (AAHRPP) since 2011.

## Appendix I

## University IRB Approval Letter



## EAST CAROLINA UNIVERSITY

University & Medical Center Institutional Review Board (UMCIRB)  
 Brody Medical Sciences Building, 4N-70 • 600 Moye Boulevard • Greenville, NC 27834  
 Office 252-744-2914 • Fax 252-744-2284 • [www.rede.ecu.edu/umcirb/](http://www.rede.ecu.edu/umcirb/)

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TO: Susan Bachmeier, ECU College of Nursing, DNP Program

FROM: University & Medical Center Institutional Review Board (UMCIRB) *ES*

DATE: October 24, 2019

RE: Doctor of Nursing Practice (DNP) Project

TITLE: Reducing 30-Day Readmissions from a Skilled Nursing Facility through Implementation of a Discharge Bundle

This activity has undergone review on 10/24/19 by the UMCIRB office. A Doctor of Nursing Practice candidate is planning a project at Wilkes Medical Center and Wilkes Senior Village in North Wilkesboro, NC to reduce 30 day readmissions to the hospital from the skilled nursing facility and to improve communication between the two facilities. The Wake Forest University (WFU) Health Sciences IRB determined the project met Exempt category #2 of the 2019 Common rule. The UMCIRB will rely on the WFU IRB determination for this research study.

Contact the office if there are any changes to the activity that may require additional review.

Relevant Definitions for Human Subject Research:

- *Research* means a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge. Activities which meet this definition constitute research for purposes of this policy, whether or not they are conducted or supported under a program which is considered research for other purposes. For example, some demonstration and service programs may include research activities
- *Human subject* means a living individual about whom an investigator (whether professional or student) conducting research obtains:
  - (1) Data through intervention or interaction with the individual, or
  - (2) Identifiable private information.

**The UMCIRB applies 45 CFR 46, Subparts A-D, to all research reviewed by the UMCIRB regardless of the funding source. 21 CFR 50 and 21 CFR 56 are applied to all research studies under the Food and Drug Administration regulation. The UMCIRB follows applicable International Conference on Harmonisation Good Clinical Practice guidelines.**

## Appendix J

Doctor of Nursing Practice  
Project Data Collection Tool

<b>Measure</b>	<b>Source</b>	<b>Frequency</b>
All-cause readmissions	EMR	Biweekly X 26 weeks
Admissions from SNF	EMR	Biweekly X 26 weeks
Readmission facility (coded*)	EMR	Biweekly X 26 weeks
Facility employed (coded)	Project Evaluation Tool	Prior to pilot X 1 June 2020 X 1
Role in employed facility (coded)	Project Evaluation Tool	Prior to pilot X 1 June 2020 X 1

\*Excel used to code and analyze descriptive data



## Appendix L

## Project Evaluation Tool



**DNP Project Evaluation Tool**  
**East Carolina University College of Nursing**

*You have been identified as a health care provider involved in the care and/or discharge of skilled nursing facility patients. The following questionnaire is part of a quality improvement project to assess your satisfaction with the hospital discharge process for this patient population. Participation with this questionnaire is strictly voluntary. Responses will be anonymous and the project manager will have no knowledge of who did or did not complete the questionnaire. Participation will have no impact on employment or performance appraisal. By completing this questionnaire, you acknowledge that you have read and understand the purpose of the project and voluntarily agree to participate. This survey will take approximately 2-3 minutes to complete. You will also receive a follow up questionnaire in approximately 6 months. The follow up questionnaire will contain the same questions. Thank you for your feedback.*

Please indicate your satisfaction with the following processes associated with hospital discharge of Skilled Nursing Facility patients.

1. Completeness and clarity of hospital-provided discharge information  
 1-Very Satisfied    2-Satisfied    3-Unsatisfied    4-Very Unsatisfied
2. Quality and relevance of medication reconciliation  
 1-Very Satisfied    2-Satisfied    3-Unsatisfied    4-Very Unsatisfied
3. Quality and relevance of verbal handoff communication  
 1-Very Satisfied    2-Satisfied    3-Unsatisfied    4-Very Unsatisfied
4. Workload associated with the hospital discharge process  
 1-Very Satisfied    2-Satisfied    3-Unsatisfied    4-Very Unsatisfied

Please complete the demographic information below:

1. Indicate the facility in which you primarily work:
  - a. [Hospital] Medical Center
  - b. [Skilled Nursing Facility] Senior Village
2. Role in facility:
  - a. RN            b. CNA
  - c. LPN         d. Other: \_\_\_\_\_



## Appendix M

## Implementation Team Roles and Responsibilities

Team Member Role	Responsibilities
Project Manager	<ul style="list-style-type: none"> <li>• Chair Implementation Team</li> <li>• Co-Chair Readmissions Team</li> <li>• Collect and report data (project)</li> <li>• Collect project checklists</li> <li>• Provide staff education</li> <li>• Daily support rounds</li> </ul>
Project Unit Manager	<ul style="list-style-type: none"> <li>• Daily Support Rounds</li> <li>• Education compliance</li> <li>• Bundle compliance assistance</li> </ul>
Pharmacist or Designee	<ul style="list-style-type: none"> <li>• Medication reconciliation</li> <li>• Aligning discharge meds with SNF formulary</li> <li>• Make recommendations to discharging provider</li> </ul>
Care Coordination Team	<ul style="list-style-type: none"> <li>• Identify in-scope patients</li> <li>• Guide staff in process</li> <li>• Mentor ECN</li> </ul>
Enhanced Care Nurse	<ul style="list-style-type: none"> <li>• Consult on all SNF discharges to prepare patient/family</li> <li>• Monitor for SNF patients in ED for readmissions avoidance</li> <li>• Serve as a resource for SNFs post discharge</li> </ul>
Project Unit Secretary	<ul style="list-style-type: none"> <li>• Assure checklists are available and collected post discharge</li> <li>• Assure discharge disposition is correctly documented in EMR</li> </ul>
Project Unit Nurses	<ul style="list-style-type: none"> <li>• Identify in-scope patients</li> <li>• Make pharmacy and ECN consults</li> <li>• Complete bundle checklists</li> </ul>
Quality Manager	<ul style="list-style-type: none"> <li>• Serve on Implementation Team</li> <li>• Co-chair Readmissions Team</li> <li>• Future data analysis and reporting</li> </ul>