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Use of an Evidence-Based Practice Model to Improve the
Quality of the Hospital Discharge Process

Joni Vaughn

Submitted as Partial Fulfillment for the Doctor of Nursing Practice Degree

Regis University

August 24, 2015

Transitional Care

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Using an Evidence-Based Practice Model to Improve the Quality of the Hospital Discharge Process

Problem

“Readmission of Medicare patients within 30 days of discharge from the hospital is nearly 1 in 5” (Naylor, 2012). The older adult has become vulnerable to the ever present breakdowns in the healthcare system creating serious gaps in services. Society and social services have not maintained the continual rapid steady growth of services to the older adult to match the increased life span of Americans. As Rennke (2013) reports, “Patients are vulnerable to a wide range of adverse events after discharge, with more than 20% of medical patients sustaining a preventable adverse event within three weeks of discharge” (p.433). Ineffective care transitions have many contributing factors including lack of crucial communication between health care providers, unclear medication changes at time of health status change, patient perspective on medical diagnosis, lack of adequate follow-up needs including physician visits, and incomplete or unfinished diagnostic work-ups.

Purpose

The purpose of the Capstone Project was to reallocate staff to develop and implement a transitional nurse team. The outcomes improved care transitions post hospital discharge.

Goals

The goals of the Capstone Project addressed three main imperatives of cost reduction, revenue growth, and clinical transformation.

Objectives

The objectives of the Capstone Project included improvements in the hospital discharge process to enhance a seamless continuum of care.

Plan

The DNP Project Process Model (White & Zaccagnini, 2014) was used as the guideline for the Capstone Project. Steps I & II: Problem recognition and needs assessment completed after identifying need to decrease the hospital 30-day readmission rate; problem statement written; and systematic literature review completed. Step III: Goals, Objectives, and Mission statement developed. Step IV: Theoretical underpinnings chosen supporting Capstone project. Step V: Work plan completed including timeline, budget, and written proposal. Step VI: Logic Model (Zaccagnini & White, 2014) developed and evaluation plan completed. Step VII: IRB approval obtained from Regis University and Organization chosen for site of the project. Inclusion criteria and data collection tools developed and implemented.

Outcomes and Results

A total of 42 patients received interventions. A comparison group was selected meeting the same inclusion criteria without the interventions from a Transitional Nurse. The comparison group was provided the standard case management process for monitoring during hospital stay and discharge. Data analysis revealed significant correlation of multiple study variables at the 0.05 level using a 2-tailed test and reduction of 30 day readmissions post hospital discharge. Collaboration was instrumental to the success of this project.

Acknowledgement

The author would like to thank the nursing professors of the DNP program at Regis University for all of their mentoring, guidance, and patience. Special gratitude to Dr. Patricia Cullen (DNP Faculty and Capstone Advisor) whose feedback and guidance were instrumental for completion of this project. I am deeply grateful to Dr. Diana Berkland for her support, mentoring, and willingness to serve as my DNP Clinical Mentor. I could not have imagined such wonderful colleagues to share this DNP educational journey, and want to thank you all for the peer support, feedback, encouragement, and friendship. The completion of my DNP education would not have been possible without the continual support from my husband and family members. Thank you all for accompanying me on this journey.

Joni Vaughn

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Problem Recognition and Definition

Transitional Care

“Readmission of Medicare patients within 30 days of discharge from the hospital is nearly 1 in 5” (Naylor, 2012). Many intense efforts to improve the discharge process have not changed this statistic. The 30-day readmission rate at the organization where this project occurred was 8.6% for all causes, 15.2% for heart failure, and 9.7% for hospitalist providers prior to the implementation of this capstone project. As Rennke (2013) reports, “Patients are vulnerable to a wide range of adverse events after discharge, with more than 20% of medical patients sustaining a preventable adverse event within three weeks of discharge”(p. 433). Ineffective care transitions have many contributing factors including lack of crucial communication between health care providers, unclear medication changes at the time of health status change, patient perspectives on medical diagnosis, lack of adequate follow-up needs including physician visits, and incomplete or unfinished diagnostic work-ups just to list a few. The average cost for a Medicare patient being readmitted within 30-days of hospital discharge for all causes is \$ 11,700 per case (Rizzo, 2013). Most chronically ill older adults experience “frequent transitions in health creating the need to seek care from multiple providers in various care settings” (Rennke, 2013, p. 115). Health care needs during these transitions create opportunities for poorly managed care with potential devastating consequences for the older adult. The older adult has become vulnerable to the ever present breakdowns in the healthcare system creating serious gaps in services. Society and social services have not maintained the continual rapid steady growth of services to the older adult to match the increased life span of Americans. Patients and family caregivers are presented with a complex health care system

making it difficult for them to engage in their own treatment decisions. Communication barriers continue to arise in spite of the advances in technology available for communication. Access to essential health and social services are limited due to language barriers, literacy, and cultural differences increasing the opportunities for improvement to meet serious basic needs. It is no wonder that the older adult develops distrust of the health care system and increased levels of dissatisfaction with the public awareness of medical errors and avoidable hospital readmissions. Various avenues have allowed for an increased public awareness of the potential problems within the American health care system. “In 2005, health care services for Medicare beneficiaries with five or more chronic conditions accounted for 75% of total Medicare spending” (Naylor, 2012). High rates of hospital admissions and readmissions account for a vast majority of these costs. Naylor (2012) reports, “in 2008, the Medicare Payment Advisory Commission estimated that nearly 18% of Medicare beneficiaries admitted to a hospital were readmitted within 30 days of discharge which accounts for an estimated \$15 billion in Medicare spending annually.” Naylor (2012) further reports, “Transitional care is complementary to but not the same as primary care, care coordination, discharge planning, disease management, or case management.” Focusing on highly vulnerable chronically ill patients throughout critical transitions in health are the hallmarks of effective transitional care strategies. Opportunities for improvement are numerous due to the time-limited nature of services, the increased emphasis on supporting patients and family caregivers to become partners in addressing root causes of poor outcomes with the goal of preventing avoidable re-hospitalizations.

Root causes of ineffective transitions of care identified by The Joint Commission enterprise include The Joint Commission, Joint Commission Resources, and the Center for Transforming

Healthcare. In 2012 The Joint Commission enterprise began a three-year initiative to define methods for achieving improvement in the effectiveness of the transitions of patients between health care organizations, which provide for the continuation of safe, quality care for patients in all settings. The Joint Commission has standards, National Patient Safety Goals, survey activities, and educational services that address transitions of care however these mechanisms have limited utility or reach. The Joint Commission enterprise paper released in May of 2012 reported that many factors contribute to ineffective transitions of patient care, and these root causes often differ from one health care organization to another. The root causes most often described in medical literature and by experts include:

- Communication breakdowns
- Patient education breakdowns
- Accountability breakdowns

The full list of root causes and solutions is available on The Joint Commission website at <http://www.caretransitions.org> (The Joint Commission, 2012). “The most rigorously studied approach to date is the Naylor Transitional Care Model” (Naylor, 2012).

The year 2010 was the beginning of a new focus for health care in the United States with the passing and signing into law the Affordable Care Act which created a high priority for transitional care programs to emerge. This legislation provided the United States an opportunity to transform the health care system to deliver high quality, safe, affordable, and accessible care. The Center for Medicare and Medicaid Services (CMS) committed \$500 million from 2011 to 2015 to health systems and community organizations that provide at least one transitional care intervention to high-risk Medicare beneficiaries. CMS allocated \$10 billion from 2011 to 2015

for opportunities to identify, evaluate, and disseminate innovative care delivery and payment models including transitional care models. Harvey V. Fineberg, M.D., Ph.D., President of the Institute of Medicine, wrote as part of the 2011 *The Future of Nursing: Leading Change, Advancing Health Report*, “the report calls on nurses, individually and as a profession, to embrace changes needed to promote health, prevent illness, and care for the people in all settings across the lifespan. The nursing profession cannot make these changes on its own, however; the report calls for multi-sector support and inter professional collaboration. It calls for all health professionals and health care decision makers to work with nurses to make the changes needed for a more accessible, cost-effective, and high-quality health care system” (Institute of Medicine, 2011). The purpose of this Capstone Project was to improve quality of care and outcomes related to hospital discharge transitions. Patients meeting the inclusion criteria were assessed using the following model employing the population, intervention, comparison, and outcome (PICO) developed (Titler, et al, 2001). The question addressed was whether implementation of a patient-centered transitional care model for high-risk Medicare patients diagnosed with chronic obstructive pulmonary disease (COPD) and/or congestive heart failure (CHF) decreases the current hospital 30-day readmission rate?

P - High-risk Medicare patients with COPD and/or CHF living in the Midwest Region with Primary Care Provider alignment

I - Transitional Care Team Management model

C - Current Case Management Model

O - Reduced 30-day hospital readmission rate

“Once an issue has been identified that can potentially be addressed with evidence, a formal Evidence-Based Practice (EBP) question is constructed as above” (Houser and Oman, 2011). The Institute of Medicine (IOM) *The Future of Nursing Report* accurately reports, “Advanced Practice Nurses have extensive experience across all settings, with an approach of blending counseling with clinical care, this needs clarification and coordinating health services as well as appropriate community resources in support of patients” (Institute of Medicine, 2011, p. H-3).

Significance/ Scope

This project was and continues to be significant to the current health care environment due to implementation of changes to Centers for Medicare Medicaid Services payment for hospital 30-day readmission. Organizations will no longer receive reimbursement for these cases and the projected loss to the organization due to this change is \$700 million (Berkland, 2014). Houser and Oman maintain that “valid judgments regarding clinical evidence can save lives, alleviate pain, decrease length of stay, and decrease costs”. A systematic approach to critically grade the quality or level of the evidence and strength of practice recommendations is vital to making appropriate judgments regarding clinical decisions (Houser and Oman, 2011, p. 139). Stamp, Machado, and Allen (2014) concluded, “It is clear that transitional programs have the potential to reduce readmission rates, improve quality of life, and reduce costs.” The review revealed, “interventions that had intensive tailored, multidisciplinary nurse-led inpatient education and counseling as well as home care follow-up within 72 hours post-discharge and interventions consisting of home visits alone or in combination with telephone follow-up were the most successful in yielding significant reductions in readmissions, improve quality of life,

and reduce cost.”(Stamp, Machado, and Allen, 2014, p.150). Patients deserve safe, reliable, and quality health care services. Implementation of a transitional nurse team at the organization chosen supported their 2014 quality strategic initiative of population health through nurse-led, patient-centered interventions.

Theoretical Foundation

Parse’s Human Becoming Paradigm: A Transformational Worldview (Parse, 2014) was one of the chosen theoretical foundations for this study. The ethos of human becoming is dignity, abiding truths of presence, existence, trust, and worth. The theory is structured around three abiding themes: meaning, rhythmicity, and transcendence. Structuring means the imaging and valuing of language, indicating that people co-participate in creating what is real for them through self-expression in living their values in a chosen way. Configuring rhythmical patterns of relating is the revealing-concealing and enabling-limiting of connecting-separating which means that the unity of life encompasses apparent opposites in rhythmic patterns of relating. It means that in living moment-to-moment one shows and does not show self as opportunities and limitations emerge in moving with and apart from others. Co-transcending with possibilities is the powering and originating of transforming which means that moving beyond the now moment is forging a unique personal path for oneself in the midst of ambiguity and continuous change. The themes and principles of human becoming are permeated by four postulates: illimitability, paradox, freedom, and mystery. Illimitability is the indivisible unbounded knowing extended to infinity, the all-at-once remembering and prospecting with the moment. Paradox is an intricate rhythm expressed as a pattern preference. Paradoxes are not opposites to be reconciled or dilemmas to be overcome but, rather, lived rhythms. Freedom is contextually construed

liberation. Humans are free and continuously choose ways of being with their situations, mystery. Nurses live the art of human becoming in true presence with the unfolding of illuminating meaning, synchronizing rhythms, and mobilizing transcendence. “Research guided by human becoming sheds light on the meaning of universal humanly lived experiences such as hope, taking life day-by-day, grieving, suffering, and courage” (Bournes, 2010). The human becoming theory posits quality of life from each person’s own perspective as the goal of nursing practice. Parse’s Human Becoming theory application to nursing practice differs from the traditional nursing process, particularly in that it does not seek to “fix” problems. Ability to see patients’ perspective allows the nurse to “be with” the patient and guide them toward desired health outcomes. The nurse-person relationship co-creates changing health patterns. “Parse’s Human Becoming theory application to research enhances understanding of human lived experience, health, quality of life and quality of nursing practice; expands the theory of human becoming; and builds new nursing knowledge about universal lived experiences which may ultimately contribute to health and quality of life” (Melnechenko, 2011).

Another chosen theory supporting this project is the theory of symptom self-management which is the basis of Bandura’s social cognitive theory (Bandura, 2001). Self-management conveys the message of control, empowerment, and confidence for patients with chronic illness. The theory supports the plan of care being critical to optimizing a patient’s symptom self-management behaviors which has significant positive impact on lives by reducing the symptom burden associated with the condition (p. 1). The World Health Organization strongly supports the implementation of self-management interventions and programs to empower patients with chronic illness to manage their health and health care (p. 2). The National Institute of Nursing

Research notes that the theory of symptom self-management incorporates symptom management and the adoption of health-promoting behaviors. “Utilization of this theory involves nurses partnering with their patients to tailor interventions to help self-manage symptoms” (p.8). Both theories support the project purpose that implementation of a transitional care model for high-risk Medicare patients diagnosed with COPD and/or CHF will decrease hospital 30-day readmission rate by ensuring a seamless transition from hospital discharge to home.

Review of Evidence

Literature Review

The systematic literature review comprised 64 total articles with 36 targeting hospital care transitions, advanced practice nurses, chronic disease management and population health. The 36 articles ranged from level of evidence I to VII according to the seven tiered levels of evidence adapted from Melnyk and Fineout-Overholt (Houser and Oman, 2011, p. 141). Key words queried to locate selected articles of interest were 30-day readmission rate, advanced practice nurses, adverse events, bridging the gap, care coordination, care management, care transitions, chronic disease, chronic heart failure, chronic illness care, chronically ill older adults, collaborative, complex elderly, congestive heart failure, depression, discharge process, disease management, emergency department visits, end of life, family caregivers, health information technology, heart failure, high risk, hospital care model, mortality, multi morbidity, nurse led interventions, nurse managed, patient activation, patient care, patient readmission, patient safety, population health, quality, readmissions, self-care, service utilization, systems of care, transitional care, transitional care model, and unplanned hospital readmissions. The Literature search strategy utilized the Wagner University of South Dakota Library, providing access to the

three major databases for finding the best primary evidence for most clinical nursing questions. Databases utilized to conduct the systematic review of the literature included the Cumulative Index to Nursing and Allied Health Literature (CINAHL), Cochrane Database of Systematic Reviews, and Medline or PubMed. Seven articles were Level I containing Randomized Clinical Trials (RCTs) and/or systematic review and two articles were Level II being RCTs. The literature review ended when articles started referencing other articles previously reviewed. Four key articles selected with strong support of transitional care models included Naylor’s Transitional Care Model, Coleman’s Chronic Care Model, Bridge program and Geriatric Resources for Assessment and Care of Elders (GRACE) (Counsell, Callahan, et al., 2006). Key themes found included engaged patient, nurse-led interventions, home visits, relationships among health care team and patient, self-management, and goal setting by patient with partnering with health care team. The four key articles were as follows:

Table 1: Literature Review

Naylor, 2012	Advancing High Value Transitional Care: The Central Role of Nursing and its Leadership	V Descriptive Studies review
Stamp, Machado, & Allen, 2014	Transitional Care Programs Improve Outcomes for Heart Failure Patients	I Integrative literature review previous research
Wagner, 2007	Redesigning Chronic Illness Care: The Chronic Care Model	I Cochrane Collaborative Review RTs
Rennke, et al, 2013	Hospital Initiated Transitional Care Interventions as a Patient Safety Strategy	I Systematic review

Several studies reinforced that the health care needs of the older adult are poorly managed, often with devastating consequences. This population is especially vulnerable to common breakdowns in care and serious gaps in services. Interventions need to focus on highly vulnerable chronically ill patients throughout critical transitions in health and health care, the time limited nature of services, and the emphasis on supporting patients and family caregivers to address root causes of poor outcomes and prevent avoidable rehospitalizations. Multiple studies also have revealed that cognitive impairment among hospitalized elders is poorly recognized and managed leading to hospital readmissions. The insufficient engagement of patients and family caregivers and inadequate communication between these groups and health care team members both within and across settings are the norm. Language, literacy and cultural differences, and limited access to essential health and social services further contribute to serious unmet needs, increased levels of dissatisfaction with the care experience, distrust in the health care system, and high rates of medical errors and avoidable hospital readmissions. Research findings reveal that the stress and burden associated with the caregiving experience contribute to substantially higher rates of chronic illness among family caregivers. The literature reviewed supported the Transitional Care Model which provides comprehensive discharge planning and home follow-up care for chronically ill, high risk, older adults hospitalized for common medical and surgical conditions. Central to this model is the relationship established between patients, family caregivers, and the transitional care nurse (TCN). The outcomes identified in the literature included reductions in preventable hospital readmissions for both primary and co-existing conditions, improvements in health outcomes, enhancement in patient satisfaction and reductions in total health care costs. The comparisons of transitional care programs identified a gap in the

literature pertaining to transitional care in heart failure patients as well as the great variability in the programs that have been studied. Limited studies were found that examined pre discharge and post discharge interventions for high risk patients, demonstrating a gap in the literature and the need for continued research. It is clear that transitional programs have the potential to reduce readmission rates, improve quality of life, and reduce cost. Interventions that had intensive tailored, multidisciplinary nurse-led inpatient education and counseling, as well as home care follow-up within 72 hours post discharge, and interventions comprising of home visits alone or in combination with telephone follow-up were the most successful.

Table 2. Level of Evidence

Level	Seven Tiered Levels of Evidence
I	Systematic review, meta-analysis, RCTs, EBP guidelines based on SR of RCTs
II	At least one well-designed RCT
III	Quasi-experimental studies
IV	Non-experimental studies
V	SR of descriptive and qualitative studies
VI	Single descriptive study or qualitative study
VII	Expert opinion, regulatory opinions

(Melnik and Fineout-Overholt [in Houser and Oman, 2011])

Project Plan and Evaluation

Market/Risk Analyses

A Strengths-Weaknesses-Opportunities-Threats (SWOT) analysis was conducted to determine the strengths, weaknesses, opportunities, and threats to the topic of Transitional Care.

Strengths identified were: organizational strategic initiative focus of population health, executive leadership support of project, physician support of project, advanced practice nurse (APN) preferred, or master's prepared registered nurse led, APN knowledge of "Red Flags" or warning signs of potential exacerbation of chronic conditions, collaboration across disciplines, and patient-centered interventions and goals. Weaknesses identified were: current risk stratification tools have potential of error, no additional staff but rather reallocation of current staff, current system of care being physician driven without patient input, ease of data sharing across continuum of care, available funding, social and physical resources supporting adherence to plan of care, lack of quality and financial incentives for providers due to current fee for services focus, and the need for interpreter services for the identified 137 language and cultural differences of population currently being served. Opportunities identified were: patient self-management of health care with patient directed goals and decisions on appropriate interventions, development of community partnerships with other health care providers and services, increased collaboration among providers and agencies, nurses to work at the top of their licensure, and support to patients, family members, and/or caregivers. Threats identified were: primary care provider support in trusting the transitional care nurse judgment and providers' habit of having patients go to the emergency department after clinic hours, home health services communication breakdowns where expectations differ between senders and receivers of patients in transition, lack of teamwork and respect, accurate identification of high-risk Medicare patients based on nursing judgment of inclusion criteria, staff willingness to adopt a new culture of care allowing patients to become partners with the health care team and setting personal goals and interventions, and regulatory standards that require specific interventions be prescribed for

patients with certain diagnoses with no regard to patient's ability to adhere to intervention or understand reason for specific intervention. The Joint Commission supports the need for a more effective approach to continuing safe, quality patient care in all settings (Burke, Kripalani, Vasilevskis & Schnipper, 2013). Driving forces related to this project included the community focus on wellness following a recent community needs assessment identifying top health concerns of hypertension, obesity, and lack of exercise creating a focus on community education being rolled out with the theme of "Better Choices, Better Health". Other identified driving forces were the organizational focus on population health management, the Institute of Medicine's 2011 report, "The Future of Nursing: Leading change, advancing health" with the President, Harvey Fineberg MD, PhD. stating, "high-quality care cannot be achieved without exceptional nursing care and leadership", financial and governmental forces of denial to pay for readmissions within 30-days of hospital discharge, and transitional care models identified as a high priority under health reforms. Restraining forces related to this project included the evidence, through literature search, of insufficient engagement of patients and family caregivers related to past and current practice of "the doctor knows best" and patients having little knowledge of where to start with management of their health. Another restraining force was inadequate communication related to discharge instructions and medication reconciliation at time of hospital discharge. A final restraining force was the issue of public distrust in the health care system due to media reports of medical errors and avoidable adverse events. The sustainability of this project is being demonstrated with the changing role of case managers' and advance practice nurses' focus on population health. The decrease in scheduled inpatient procedures and shortened length of hospital stay support the need for a transitional nurse team. The organization

plans to increase integration of clinic and hospital services with further transitional nurse team expansion to include service to all patients.

Project Stakeholders

Project stakeholders identified were the Quality Cabinet of the facility to include:

- Chief Executive Officer (CEO)
- President of the Enterprise
- Presidents of various entities
- Vice President of Care Innovation Strategies
- Operational Intelligence

Clinical Operations team to include:

- Chief Medical Officers from all regions of the enterprise
- Chief Medical Information Officers from all regions
- Chief Operating Officer for the Enterprise

The next level of leaders is the Enterprise Population Health Executive Committee comprised of:

- Some of the members from the Quality Cabinet with Directors of Finance
- Decision support
- World clinics
- Health plan
- Ambulatory Outpatient Clinics

The analytics sub-committee identified the:

- Patient population

- Outcome Metrics

The final but not the least of importance is the Medicare high-risk patient meeting the inclusion criteria.

Project Team

The project team from the region of implementation involved the Chief Nursing Officer, the Chief Financial officer, the Director of Quality and Safety, the Director of Center for Care Management, the Clinic Physician Quality Leader, the Hospitalist Medical Director, Hospital Case Mangers, Clinic Health Coaches, Advance Practice Nurse, Clinical Informatics leader, Decision Support leader, DNP student as the lead for this project, and the DNP's Clinical Advisor.

Cost-Benefit Analyses

The cost-benefit analysis, for the identified organization was very unique due to the elevation of the strategic initiative of population health. The Transitional Nurse Team consisted of a DNP candidate, masters prepared, registered nurse with care management experience who was budget neutral and reallocated for this project. Data collection and storage computer systems were reallocated to support the project. Costs for the project implementation involved equipment for transitional nurses to conduct home visits of approximately \$150 per nurse. Potential savings with the implementation of a Transitional Nurse Team are in relationship to the CMS readmission reduction program which identified three percent of Medicare funding is at risk with Medicare high-risk patients who are readmitted within 30-days of hospital discharge. A study utilizing the Naylor's Transitional Care Model has demonstrated total annual

intervention cost for implementation of a transitional nurse team to be \$115,856 which was \$982 per patient (www.agingkingcounty.org).

Table 3: Cost Benefit Analyses

Costs	Benefits
Staff salaries	Reallocation of staff
	Variation per facility based on staffing structure
Staff duties and roles	No reduction of staff necessary to compensate for decrease in hospital inpatient census.
	Culture of nursing at the bedside change
Time: Individualized patient care planning	Partnership with patient: goal setting, planning, evaluating health
	No more one size fits all
	Focus on High-risk Medicare patients
Supplies for home visits	Assessment tools such as blood pressure cuffs, scales, etc. Minimal cost. Basic home health equipment.
	Taking health care outside the walls of the hospital
Communication	Keep line of communication open between patient, nurse, and provider.
	Resource for patient having questions or concerns
	24/7 access to nurse
Data collection	Outcome metrics: Increase services by decreasing costs
	Documentation of reduced costs
	Documentation of individualized patient directed interventions
Decrease of inpatient census	Decreased readmission rate within 30-days of hospital discharge.

	Decrease or elimination of penalty fee for readmissions.
	Increased patient satisfaction
	Decreased patient length of stay
Nurses working at top of licensure	Increased staff satisfaction
	Nurse empowerment
Taking evidence-based care to the bedside and beyond	Increased seamless transition from hospital to home for patient
	Increase or deepen nurse knowledge of taking evidence-based care and putting into practice.

Project Objective

The mission of the project was dedicated to reduce patient readmission rates and improve effective communication across the continuum of care for smoother transitions of care post-hospital discharge. The vision of the project was to be instrumental in facilitating, planning, implementing, and evaluating a necessary change in the current health care system. The goal of the project was to implement a Transitional Nurse Team program that reduces the 30-day readmission rate for identified high-risk Medicare patients. The project objectives included the following:

- Determine current readmission rate for high-risk Medicare patients during the three month period before project implementation.
- Identify gaps in the current case management model.
- Evaluate inclusion and exclusion criteria of the identified patient population.
- Implement the Transitional Nurse Team model.
- Perform data collection for the three month period following project implementation.

- Reduce readmission rate for identified high-risk Medicare patients

$$\frac{\text{High Quality + Satisfaction}}{\text{Reductions in Acute Readmissions (Costs)}} = \text{TNT as High Value Proposition for Organization}$$

Figure 1: Project Vision

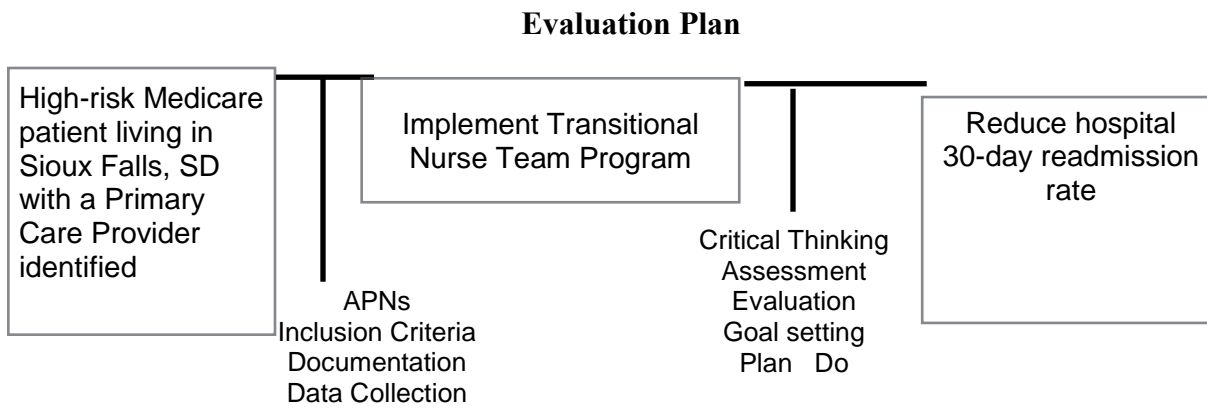


Figure 2: Evaluation Plan

The evaluation plan was ongoing from the start of implementation of the Transitional Nurse Team throughout the project. Communication with case managers and physicians of patients identified meeting inclusion criteria was instrumental in patient’s acceptance of a new service following hospital discharge.

Logic Model

Table 4: Logic Model

Resources	Constraints	Activities	Outputs	Outcomes	Impact
Leadership support financial and implementation process	Funding	Literature review of current transitional care models	Number of eligible patients & APN's	Decreased 30-day readmission rate	Decreased hospital Medicare admissions without reimbursement
APNs x 4 to begin program	Current culture of care delivery	Review Sanford's population health strategy initiative	Number of medication changes upon hospital discharge	Increased collaboration among care providers	Increased and sustained improved patient satisfaction scores
Medical equipment for home visits	APN available time	Review Sanford's CMS OneCare grant to determine collaboration efforts	Number of co-morbidity diagnosis/eligible patient	Increased patient understanding of hospital discharge instructions	Earlier identification and prevention of preventative health decline in patient population
IT and Decision support assistance to develop reports for data collection	Regulatory barriers	Develop hospital discharge screening criteria for inclusion of high-risk patients	Number of eligible patients with inadequate support system	Increased adherence to prescribed therapeutic regimen	Increased patient engagement and self-care

Primary Care Providers collaboration	Enrollment and marketing of innovation	Perform Patient Activation Measurement (PAM) on all eligible patients	Number of eligible patients with low health literacy identified by PAM	Increased patient engagement in self care	Holistic, person/family centered approach
Hospital case managers for referrals and identification of potential eligible patients	Patient and provider expectations and needs	Develop role of transitional nurse team	Number of eligible patient with prior history of non-adherence to prescribed	Increased patient satisfaction	Nurse-led team model of care
Eligible patients acceptance of program	Defining roles of frontline staff	Identify key components to be addressed on home visit and/or phone calls	Number of interventions/patient	Decreased total health care costs	Information/communication systems that span settings
Organizational support of culture change of care delivery	Information technology needs	Determine appropriate documentation of transitional nurse activities	Number of home visits and phone calls made to eligible patients	Increased patient quality of life.	Nursing empowerment and satisfaction

Experimental/Statistical Model

This project was a quasi-experimental, pre-intervention, post-intervention evaluation design using descriptive quantitative calculations, simple descriptive statistics and t-test to evaluate the intervention effect. The ideal sample size for 80% power, a 0.05 level of significance, and 95% confidence interval that the intervention had a moderate to large effect could be as few as 28 patients if the effect is large or as high as 85 patients if a less robust effect was observed (Cohen, 1992). Although this statistical reference is dated, it is a seminal publication on this topic and was suggested as a reference for this project. This method was chosen due to the nature of the identified problem to be analyzed. According to Zaccagnini & White, “two important aspects of any quantitative research project are that the project builds on prior results or evidence and provides a basis for future research and discovery” (Zaccagnini & White, 2014). Using the quasi-experimental design allowed active manipulation of the independent variable to see the effect on the dependent variable. The data collected were decoded of any personal identification back to the patient participating in the project and coded numerically so it could be systematically analyzed and interpreted utilizing statistics software IBM SPSS Statistics 23.

The evidence-based practice process model used was the Iowa Model for Evidence-based Practice to Promote Quality Care (Zaccagnini & White, 2014).

Step 1: Problem-focused triggers

- Prior to implementation, readmission rate (All causes: 8.6%, Heart Failure: 15.2%)
- Pre-implementation gaps identified in the discharge process

- Cost of 30-day readmission high-risk Medicare patient (All causes: \$11,200, Heart Failure:\$13,000, COPD \$10,900)

Step 2: Knowledge-focused triggers

- Naylor's Transitional Care Model (Naylor, 2012)
- Institute of Medicine 2011 Report, "The Future of Nursing"
- Provided comprehensive discharge planning and home follow-up care for chronically ill, high-risk, Medicare hospitalized patients (Rizzo, 2013)

Step 3: Appropriate Change

- Organizational strategic initiative for 2014 - 2015
- Executive leadership team and project team formed
- Literature search performed with identification of a Transitional Nurse Team development and implementation
- Outcome to be achieved was to reduce readmission rate for identified high-risk Medicare patients
- Development of a Transitional Nurse Team
- Implementation pilot of Transitional Nurse Team on Cardiology and Pulmonary inpatient units

The State Department of Health, where the project was implemented, in 2013 identified the leading cause of death being heart disease with chronic lower respiratory disease being third. The population chosen for this project was high-risk Medicare patients with a diagnosis of COPD and/or CHF living in the Midwest with an identified primary care provider. High-risk Medicare patient inclusion criteria were identified to include the following:

- *Age 65 or older
- *Medicare funded
- Functional deficits
- *Four or more co-existing conditions including COPD and/or CHF
- *Six or more prescribed medications
- Two or more hospitalizations in the past six months
- *Hospitalization in the past 30 days
- Inadequate support system
- Low health literacy
- Documented history of non-adherence
- *Primary care provider identified

Starred inclusion criteria were considered highly important to this Capstone Project. If two or more criteria were met, a referral to the Transitional Nurse Team was initiated. The above mentioned inclusion criteria were adapted from Naylor's transitional care model and organizational demographics (Naylor, 2012). Exclusion criteria identified were:

- Age less than 65 years old
- Resident outside the city limits of chosen city for project
- Less than four co-existing conditions
- No diagnosis of COPD and/or CHF
- No identification of primary care provider
- Less than six prescribed medications
- Able to self-manage health care

- Available strong support system.

The exclusion criteria were chosen based on demographics, travel distance, time of travel, and areas of service. The Transitional Nurse Team intervention was comprised of a master's prepared registered nurse with five or more years of nursing experience including case management, home health, and public health. The initial Transitional Nurse visit occurred while the patient was in the inpatient hospital setting with interdisciplinary team involvement. Post-hospital discharge, the Transitional Nurse performed a home visit within 24-48 hours to assess the patient's physical condition including vital signs, lung sounds, weight, if indicated, diet and activity restrictions. The Transitional Nurse assessed medication adherence according to discharge medication reconciliation and patient understanding of the purpose of medications prescribed. The Transitional Nurse discussed with the patient potential red flags or change of condition with development of an action plan to prevent readmission to hospital if possible, reinforced hospital education topics related to health issues, and appropriate warning signs to notify physician/Transitional Nurse/or call 911. Additionally, verification of compliance with a follow up physician appointment within 7-14 days of hospital discharge, available transportation to appointment, and support person to escort patient to appointment was available if needed or indicated. During initial home visit the transitional nurse assessed the home environment for factors related to patient safety. Weekly follow up phone calls to monitor progress toward goals, answer questions, provide support and making additional home visits if concerns arose by patient or transitional nurse were conducted. Patients with the potential of needing service beyond 30 days had an agreement plan that they would be referred to home health providers or appropriate level of care determined by consulting with patient, family, and primary physician.

The identified population was sampled using the inclusion criteria with a maximum number at any given time of twenty patients. Sample size was determined after consultation with Elizabeth Shaid, MSN, CRNP, University of Pennsylvania School of Nursing, colleague of the author of the Mary Naylor Transitional Care Model in multiple locations. Ms. Shaid strongly recommended using advanced practice nurses as Transitional Care Nurses due to their increased clinical background and knowledge.

An additional quantitative data collection tool utilized was the Patient Activation Measure (PAM) survey developed by Dr. Judith Hibbard, Professor of Health Policy at the University of Oregon. Dr. Hibbard states, “Measuring patient activation, or engagement, in self-management of personal health, using PAM should be as ubiquitous as measuring blood pressure while we pursue more personalized patient support and value-based care. Even small changes in activation are predictive of improved health outcomes and lower costs” (Insignia, 2015). This survey tool was implemented at the same time as the Transitional Nurse Team implementation by the case management team. As patients were identified who met the inclusion criteria, if a PAM survey had been completed it was utilized to help guide the interventions according to patient’s activation level but was not part of this project.

Institutional Review Board (IRB) approval was sought with a request for an Expedited Categories 4 and 7 approval through Regis University and the Organizational IRB committee at site identified for project implementation. Category 4 would have consisted of data collection for clinical care and Category 7 for any surveys or interviews performed to assess the Transitional Nurse Team and/or patients. IRB approval was received from both facilities with the determination that the proposed activity posed no more than minimal risk to the subjects.

Patient privacy was protected throughout project with all the patient identification removed from data collected and patients identified by sequential case numbering. Lists identifying the patient name with case number were stored separately in a secure location and kept separate from raw data. Data were reported in aggregate at the completion of the project and stored in an organizational secure decision support computer program system. Access to the data was limited to decision support staff, informatics staff, and the project manager.

Project Findings and Results

Findings and Results

Statistical data were analyzed utilizing the software IBM Statistical Program for the Social Sciences (SPSS) Statistics 23. In the three month period prior to implementation of the Transitional Nurse Team, the mean readmission rate for high-risk Medicare patients was 9.6% (all causes), and 18.5% for CHF. During and following the Transitional Nurse Team implementation, the mean readmission rate for high-risk Medicare patients decreased to 9 % (all causes) and 14.4% for patients with CHF. The average daily census prior to implementation was 341 patients and following implementation was 358.9. The sample size for the intervention group and the case management group was 42 participants each.

Table 5: Data Results

Variable	Study Group n= 42	Comparison Group n = 42
Gender	66.7% Female 33.3% Male	47.6% Female, 52.4% Male
Age mean	78 with 3 in their 90's	72 with 4 in their 90's
Race	95.2% Caucasian 4.8% American Indian	90.5% Caucasian 7.1% American Indian, 2.4% Bosnian
Readmission within 30 days	14.3% (n = 6)	35.7% (n=15)
Deceased	7.1% (n = 3)	31% (n=13)
No readmission	78.6% (n = 33)	70.3% (n= 27)

Home Visit 24-48hrs after DC	59.5% completed	14.3 % (n=6) HHS 40.5 % (n=17) Home 23.8% (n=10) SNF 2.4 % (n=1) Assist. Living
Number of Home visits	1 x 57.1%	
Number of F/U Phone Calls	2 x 73.8%	None
Inpt. Provider	71.4% Hospitalist only	85.7% Hospitalist Only
(Mean) Number of Meds	20.2	19.7

Analyses of significant data from the above table revealed that both groups were a mix of male to female participants, age range was similar, Caucasians were the largest race which is indicative of our geographic data, and hospitalist providers were largely providing inpatient care to all participants. Correlations of data revealed the following results for the study group participants:

- There was a strong positive correlation with age and hypertension indicating that with increased age there is an increased incidence of hypertension.
- There was a strong positive correlation with number of prescribed medications and hypertension indicating that with the increased incidence of hypertension, a larger required number of medications were prescribed.
- There was a moderate positive correlation with age and PHQ-9 survey score indicating that with increased age there is an increased incidence of depressive symptoms.
- There was a moderate positive correlation with incidence of anxiety and the number of prescribed medications indicating that with an increased in medication complexity, an increase in reported anxiety occurred.

Correlations of data relative to readmissions within 30 days of hospital discharge revealed the following results for the study group:

- There was a strong positive correlation with the number of prescribed medications and readmissions indicating with the increased number of medications a participant was prescribed there is an increased incidence of hospital readmission within 30 days of discharge.
- There was a moderate positive correlation with incidence of depression and readmissions indicating with the increased incidence of depression symptoms there is an increased incidence of hospital readmission within 30 days of discharge.
- There was a moderate positive correlation with incidence of diabetes mellitus and readmissions indicating with the increased incidence of diabetes mellitus there is an increased potential for hospital readmission within 30 days of discharge.

Correlations of data revealed the following results for the comparison group of randomly selected participants meeting the inclusion criteria but receiving the standardized case management model for hospital discharge:

- There was a weak negative correlation with the number of prescribed medications and the incidence of diabetes mellitus and COPD indicating there is a decreased incidence of diabetes mellitus and COPD with a decreased number of prescribed medications.
- There was a weak positive correlation with age and the incidence of anxiety and COPD indicating that with the increased age there is an increased incidence of anxiety and COPD.

Table 6: Chronic Illness Diagnosed

Variable	Study Group	Comparison Group
COPD	57.1%	31%
Depression	33.3%	33%
Diabetes Mellitus	57.1%	28.6%

Heart Disease	73.8%	83.3%
Hypertension	38.1%	35.7%
Anxiety	26.2%	26%
Completions of:		
PAM	26.2%	19%
Level 1	2.4%	2.4%
Level 2	16.7%	9.5%
Level 3	2.4%	4.8%
Level 4	4.8%	2.4%
Support System Available:		
Family	61.9%	61.9%

Statistical results comparing the study participants and the participants receiving the standard case management model of care revealed a correlation of data where both groups demonstrated similar results of a weak negative correlation between the incidences of heart disease and the incidence of readmission within 30 days of hospital discharge. This indicates that with both groups decreasing the incidence of heart disease decreases the incidence of readmission. Both groups' data revealed a strong correlated relationship between the increased number of prescribed medications and the increased likelihood of hospital readmission within 30 days of discharge. The statistical results indicated that as a participant was prescribed even one additional medication beyond 12 medications a statistically significant positive correlation was observed indicating the likelihood of hospital readmission within 30 days increases for each additional medication prescribed. The data revealed a strong positive correlation with study group participants who allowed the Transitional Nurse to conduct a home visit within 24 to 48 hours of hospital discharge and the hospital 30 day readmission rate. Statistical analyses of the data indicated a Transitional Nurse home visit conducted within 24 to 48 hours of hospital discharge statistically significantly decreased the incidence of hospital readmission within 30 days of discharge. Clinical importance identified from the statistical results revealed

opportunities for improvement in the current case management discharge process and the need for increased focus on individualized patient education based on a patient's health literacy and willingness to become a partner in the self-management of their health.

Limitations, Recommendations, Implications for Change

Limitations

There were limitations identified as the project was being developed and ready for implementation. These included staff involvement changes and a decrease of available staff planning to assist with implementation of project. The sample size was limited due to time constraints and the Transitional Nurse Team was reduced to a "team" of one master's prepared nurse (the Principal Investigator of the project). An important identified limitation to this project in the beginning was the lack of risk stratification tools to accurately identify the target population to be studied. A significant amount of time was spent initially developing and identifying the patient inclusion and exclusion criteria.

Recommendations

Recommendations for further development and sustainability of the Transitional Nurse Team Model involve the identification and engagement with high-performing post-acute care providers to further refine the organizational population health strategic initiative. Further recommendations include the evaluation and redesign of care management roles to empower nurses to work at top of licensure as identified as a goal in the 2011 IOM Report titled, "*The Future of Nursing: Leading Change, Advancing Health*" (IOM, 2011). Care coordination protocols should be standardized to develop a high-performing post-acute care network facilitating coordination across care settings. Increased utilization of evidence-based clinical

protocols with data-driven care improvement capabilities should be employed to promote consistent clinical care across the continuum of care for the patients served. There should be an increased utilization of pharmacy staff to improve medication reconciliation upon admission and discharge from the inpatient setting and across the care continuum.

Implications for Change

Readmissions are costly and undesirable to the health care organization where the project was implemented. The promotion of improved transitional care requires collaborative interventions that cross the care continuum to ensure safe, reliable and quality patient care. Several components addressing population health are being implemented currently and include high-risk case managers in the emergency room and ambulatory outpatient settings, formation of an inter-professional leadership team to guide and monitor the change process, development of a tele-health medicine program with virtual visits and consultative services, initiation of improvements to the electronic medical record to create a longitudinal care plan crossing patient care settings and fostering collaborative patient care and coordination of community based care utilizing parish nurses and community resources. The Transitional Care Model reduces preventable hospital readmissions, improves health outcomes, increases patient satisfaction, and reduces the cost of care (Baldwin, Black, & Hammond, 2014). The evidence from this project demonstrated support of this statement since the 30-day readmission rate for participants having a Transitional Nurse involved in their health care team was reduced to 14.3%. The 30-day readmission rate for participants receiving current case management process involvement was 35.7%. It is time to change health care from being penalized for undesired quality outcomes and receive rewards beyond monetary rewards for doing the right thing, at the right time, for the right

patient every time. The health care delivery system is changing rapidly and all of us can serve as a catalyst to this positive change.

The Doctor of Nursing Practice, DNP, has been prepared with an understanding of biostatistical and epidemiological methods providing the ability to analyze census data, morbidity and mortality reports, data from the National Center for Health Statistics, and other sources of public health data in relationship to population health. An understanding of the difference between relative risk and attributable risk is necessary when working on the population health level to develop appropriate interventions and decrease any potential for causing harm by inappropriate prevention activities. The DNP is well prepared to implement evidence based nursing in clinical practice to improve the health of the aging adult population. A key message of *The Future of Nursing* report released in 2011 by the Institute of Medicine recommended that nurses should be able to practice to the full extent of their education and training (IOM, 2011). The DNP is poised to fill the gap in patient centered care.

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Appendices

Appendix A: Letter of Support (Original has signature of approval)

November 20, 2014

Diana L. Berkland, PhD, RN
Chief Executive Nursing Officer
Sanford University of South Dakota Medical Center
Sioux Falls, South Dakota
(605) 333-3252

Dear Diana,

I am writing to formally obtain your permission as Chief Executive Nursing Officer at Sanford USD Medical Center to use this facility as the location for my DNP Capstone Project. The title of my DNP Capstone Project is, "Implementation of a Transitional Nurse Team" which will involve master prepared registered nurses and advanced practice nurses partnering with high-risk Medicare patients diagnosed with congestive heart failure (CHF) and/or chronic obstructive pulmonary disease (COPD). Patient selection will be determined by a predetermined inclusion criteria checklist which I have attached for your review. When a patient has been identified as meeting the inclusion criteria, the case manager will notify me as the principal investigator of the project with the patient referral. Upon receipt of the patient referral, I will further evaluate appropriateness of patient's inclusion with the implementation of a transitional care nurse to enhance the transition from hospital discharge to home with the goal to reduce the 30 day readmission rate of CHF and/or COPD patients. IRB review and approval will be obtained prior to implementation of project from Regis University and Sanford Health.

Your signature on this letter will serve as Executive approval for my DNP Capstone Project, "Implementation of a Transitional Nurse Team" to be conducted at Sanford USD Medical Center to begin following IRB approval.

Thank you for your support and mentoring throughout my DNP journey.

Respectfully,

I agree to above request.

Joni Vaughn, DNPc, RN
(605) 323-9053

Signature

Date

Appendix B: Implementation Plan

Implementation of the Transitional Nurse Team
Weekly home visits and/or phone calls by a Registered Nurse for up to 12 weeks post hospital discharge
<i>Home Visits Include:</i>
<ul style="list-style-type: none"> • Medication reconciliation
<ul style="list-style-type: none"> • Checking vital signs and weights if applicable
<ul style="list-style-type: none"> • Review of Hospital discharge record (AVS)
<ul style="list-style-type: none"> • Assessment of need for additional resources or services
<ul style="list-style-type: none"> • Assessment of safety needs
<ul style="list-style-type: none"> • Assessment of learning needs
<ul style="list-style-type: none"> • Verify or schedule follow-up Physician appointment within 7 – 14 days post hospital discharge
<ul style="list-style-type: none"> • Education on disease process and warning signs
<ul style="list-style-type: none"> • Upon discovery of a decline in patient health status, the TCN has the ability to contact the patients’ healthcare provider, report the problem, and receive and implement orders in an attempt to improve patient status and avert a readmission to the hospital
<ul style="list-style-type: none"> • Communicate with PCP after initial home visit, upon discharge from TNT, and as needed via in-basket messaging EMR.

Appendix C: Inclusion Criteria

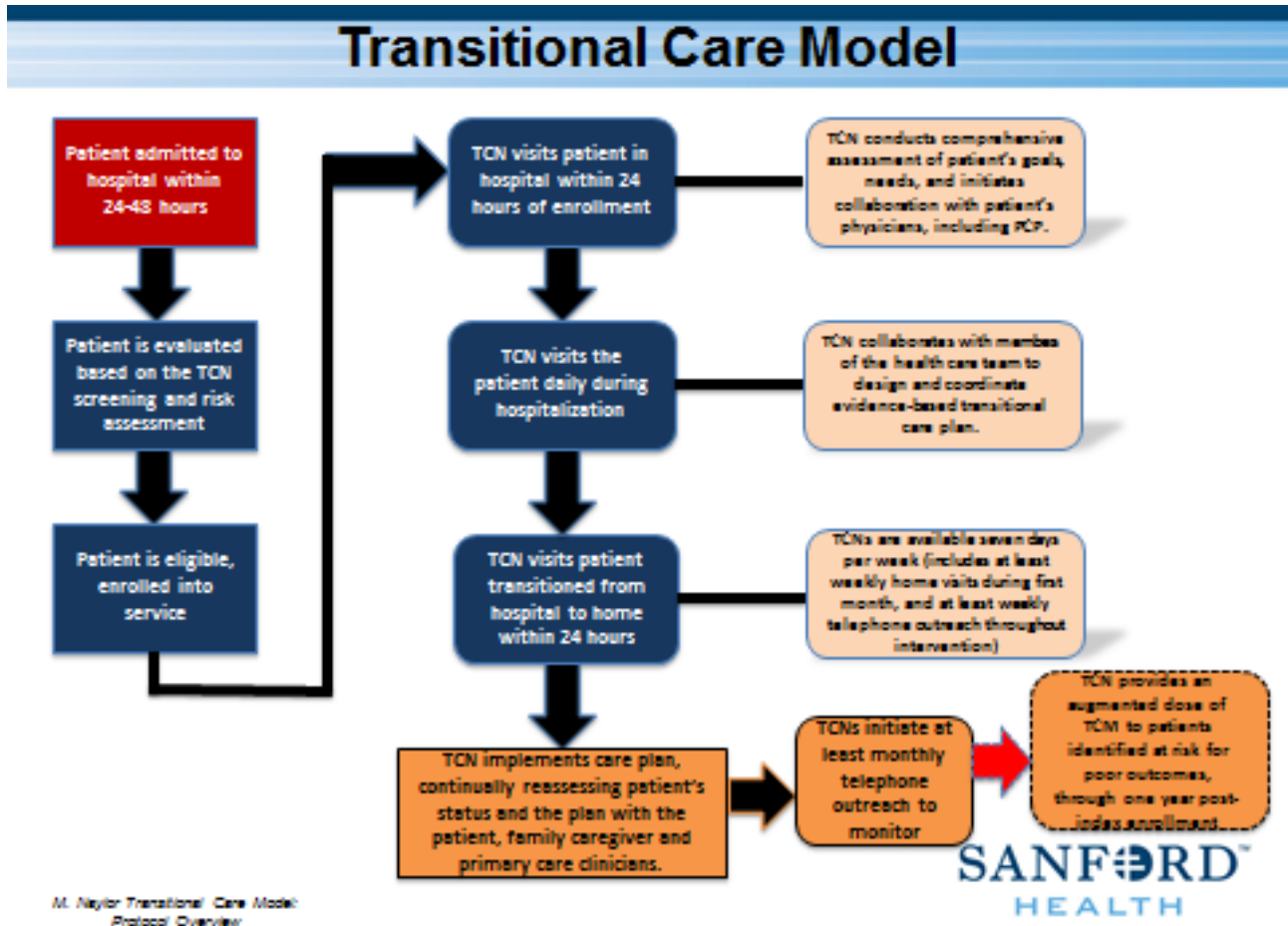
Transitional Nurse Team (TNT) Hospital Discharge Screening Criteria for High-Risk Older Adults	
Are the following statements true for the patient? Check if yes	
	Age 75 or older
	Moderate to severe functional deficits (Therapy notes, CM Risk Assessment, Tinetti, Get Up & Go)
	An active behavioral and/or psychiatric health issue (PhQ9 score elevated)
	Four or more active co-existing health conditions
	Six or more prescribed medications
	Two or more hospitalizations within the past 6 months
	A hospitalization within the past 30 days
	Inadequate support system (Lives alone w/wo family involvement)
	Low health literacy
	Documented history of non-adherence to the therapeutic regimen
	<i>If 2 or more findings are present further investigation is warranted and formal collaborative assessment of discharge planning—transitional care needs should be initiated.</i>
	Living in Sioux Falls
	Sanford Health PCP
	Medicare Coverage

Bixby and Naylor, <http://consultgerirn.org/uploads/File/trythis/issue26.pdf>

Patient Label Place Here

Please fax to Joni Vaughn's attention (605-328-3216), or scan and return by email

Appendix D: Transitional Care Model



Appendix E: Business Card



Transitional Nurse Team

Partnering with Patients

To enhance the quality of care transitions upon hospital discharge

Joni Vaughn, DNPc, RN

Ph: (605) 333-3234
 Fx: (605) 312-9820

Sanford USD Medical Center
 1305 W 18th Street
 Sioux Falls, SD 57117

Appendix F: Patient Informational Brochure

(Brochure Cover)

Transitional Nurse Team



Partnering with patients to enhance the quality of care transitions upon hospital discharge

(Page Two)

COLLABORATION

A Transitional Nurse will:

- Monitor your health progress while in the hospital
- Work with your health care team to set goals and identify needs towards your discharge plan

Following hospital discharge, the Transitional Nurse will:

- Make a home visit within 24 – 72 hours of hospital discharge
- Work with your health care provider/team to review:

- Medications



- Blood pressure, pulse, temperature and weight (if applicable)

- Education from hospital after visit summary (discharge paperwork) any signs or symptoms that indicate a worsening of conditions and how to respond to them should they occur
- Make sure follow-up appointment with health care provided is arranged within 7-14 days of discharge

(Page Three)

FOLLOW-UP

A Transitional Nurse will:

- Accompany you to post-discharge follow-up doctor visit, as needed
- Work with health care provider
- Conduct weekly home visits, as needed
- Make phone contact for each week if home visit not scheduled
- On-call seven days per week for home visits and telephone calls
- Maintain open line of communication among patient, family caregivers, and health care provider(s)

Transitional Nurse ongoing communication with Health Care Provider via Email message:

- After initial home visit to communicate post hospital discharge involvement of transitional care nurse
- As needed for medical clarification
- Upon return to prior functional level and no further transitional care team involvement necessary

Glad to be a member of your health care team.

(Back of Brochure)

A free service provided to eligible patients.



Appendix G: Nurse Interventions Data Collection Tool

Nurse Intervention Data Collection Tool

Intervention	Yes	No	NA	Comments
Participant seen within 24 hours of hospital admission				
Participant seen daily while in hospital				
Monitored participant’s progress daily while in hospital				
Made home visit within 24 hours of hospital discharge				
Performed medication reconciliation at initial home visit				
Changes in medication from prior to hospitalization				# of med changes_____
Participant had all medications ordered upon discharge				
Participant accurately (100%) explain reason for medication on initial home visit				
Participant accurately (100%) explain dosage and time of administration of medication on initial home visit				
Participant using daily medication administration tool (e.g. pill box, calendar, schedule, etc.)				
Participant able to ambulate around home without assistive device (cane, wheelchair, etc.)				
Participant’s home free of safety concerns on initial home visit (e.g. throw rugs, stairs, clutter, etc.)				
Review and re-enforcement of hospital discharge instructions with each participant encounter				
Coach and mentor participant on ‘Red Flags’				
Addressed questions and concerns participant raised				
Did participant have follow-up appt. scheduled within 7-10 days post hospital discharge				If no appt scheduled, did you get one scheduled_____
Follow-up appt. scheduled with primary care provider				
Accompanied participant to follow-up appt.				
Upon discharge from project, participant met all discharge criteria				
Participant was seen in the emergency department within 30 days of hospital discharge				
Participant was re-admitted to hospital within 30 days of prior hospital discharge				
Total number of <i>home visits</i> made to participant during project involvement_____				Total number of <i>phone calls</i> made to participant during project involvement_____

Appendix H.: CITI Completion Report

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI)

HUMAN RESEARCH CURRICULUM COMPLETION REPORT

Printed on 05/29/2014

LEARNER

Joni Vaughn (ID: 4182257)

7012 West 51st Street

Sioux Falls

South Dakota 57106

USA

DEPARTMENT Nursing

PHONE 605-323-9053

EMAIL vaugh743@regis.edu

INSTITUTION Regis University

EXPIRATION DATE 05/28/2017

SOCIAL BEHAVIORAL RESEARCH INVESTIGATORS AND KEY PERSONNEL

COURSE/STAGE: Basic Course/1

PASSED ON: 05/29/2014

REFERENCE ID: 13090988

REQUIRED MODULES DATE COMPLETED

Introduction 05/28/14

History and Ethical Principles - SBE 05/28/14

The Regulations - SBE 05/29/14

Assessing Risk - SBE 05/29/14

Informed Consent - SBE 05/29/14

Privacy and Confidentiality - SBE 05/29/14

Regis University 05/29/14

For this Completion Report to be valid, the learner listed above must be affiliated with a CITI Program participating institution or be a paid Independent Learner. Falsified information and unauthorized use of the CITI Program course site is unethical, and may be considered research misconduct by your institution.

Paul Braunschweiger Ph.D.

Professor, University of Miami

Director Office of Research Education

CITI Program Course Coordinator

Appendix I: Patient Activation Measurement Survey Tool



Below are statements people sometimes make when they talk about their health. Please indicate how much you agree or disagree with each statement as it applies to you personally.

Circle the answer that is most true for you today. If the statement does not apply, select N/A.

1.	When all is said and done, I am the person who is responsible for taking care of my health.	Strongly Disagree	Disagree	Agree	Strongly Agree	NA
2.	Taking an active role in my own health care is the most important thing that affects my health.	Strongly Disagree	Disagree	Agree	Strongly Agree	NA
3.	I know what each of my prescribed medications do.	Strongly Disagree	Disagree	Agree	Strongly Agree	NA
4.	I am confident that I can tell whether I need to go to the doctor or whether I can take care of a health problem myself.	Strongly Disagree	Disagree	Agree	Strongly Agree	NA
5.	I am confident that I can tell a doctor concerns I have even when he or she does not ask.	Strongly Disagree	Disagree	Agree	Strongly Agree	NA
6.	I am confident that I can follow through on medical treatments I may need to do at home.	Strongly Disagree	Disagree	Agree	Strongly Agree	NA
7.	I have been able to maintain (keep up with) lifestyle changes, like eating right or exercising.	Strongly Disagree	Disagree	Agree	Strongly Agree	NA
8.	I know how to prevent problems with my health.	Strongly Disagree	Disagree	Agree	Strongly Agree	NA
9.	I am confident I can figure out solutions when new problems arise with my health.	Strongly Disagree	Disagree	Agree	Strongly Agree	NA
10.	I am confident that I can maintain lifestyle changes, like eating right and exercising, even during times of stress.	Strongly Disagree	Disagree	Agree	Strongly Agree	NA

Appendix J: Sanford and Regis IRB Approval Letters

NOT HUMAN RESEARCH

February 10, 2015

Dear Joni Vaughn:

On 2/10/2015, the IRB reviewed the following submission:

Type of Review:	Initial Study
Title of Study:	Improving Quality of the Hospital Discharge Process using a Evidence Based Practice Model: Naylory's Transitional Nurse Team
Investigator:	Joni Vaughn
IRB ID:	STUDY00000315
Finalized Documents this review:	<ul style="list-style-type: none"> • Human Subjects Determination Form, Category: IRB Protocol; • Regis IRB Approval Letter 1203_001.pdf, Category: Other; • Participant Inclusion Criteria Checklist, Category: Checklist; • Executive Approval for Capstone Project Site.pdf, Category: Other; • Nurse Perception Survey, Category: Survey; • Participant Perception Survey, Category: Survey; • Nurse Data Collection Tool, Category: Data Collection Tool;

The IRB determined that the proposed activity is not human research. Sanford IRB review and approval is not required.

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are being considered and there are questions about whether IRB review is needed, please submit a study modification to the IRB for a determination.



Academic Grants

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IRB – REGIS UNIVERSITY

January 7, 2015

Joni Vaughn
7012 West 51st Street
Sioux Falls, SD 57106**RE: IRB #: 15-002**

Dear Ms. Vaughn:

Your application to the Regis IRB for your project, “Transitional Nurse Team”, was approved as an expedited study on January 2, 2015. It is approved per OHRP Category of Research #4.

If changes are made in the research plan that significantly alter the involvement of human subjects from that which was approved in the named application, the new research plan must be resubmitted to the Regis IRB for approval. Projects which continue beyond one year from their starting date require IRB continuation review. The continuation should be requested 30 days prior to the one year anniversary date of the approved project’s start date. A completion report of the findings of this study should be sent to the IRB.

In addition, it is the responsibility of the principal investigator to promptly report to the IRB any injuries to human subjects and/or any unanticipated problems within the scope of the approved research which may pose risks to human subjects. Lastly, a final report should be submitted at completion of the project and it is the responsibility of the investigator to maintain signed consent documents for a period of three years after the conclusion of the research.

Sincerely,

Patsy McGuire Cullen, PhD, PNP-BC
Chair, Institutional Review Board
Professor & Director
Doctor of Nursing Practice & Nurse Practitioner Programs
Loretto Heights School of Nursing
Regis University

Appendix K: Systematic Literature Review Table Sample

Article/ Journal #1	Author/ Year	Database/ Keywords	Research Design	Level of Evidenc e	Study Aim/ Purpose	Population/ Sample size Criteria/ Power	Methods/Stud y Appraisal Synthesis Methods	Study tool/ instrumen t validity/ reliability
Populatio n Health Leading Lights Summit: Eight Insights from Successfu l Populatio n Health Managers	Advisory Panel: Populatio n Health Advisor/ 2013	Population Health, High Risk, Care Managemen t	Summary of Conferenc e	VII	Summary of insight from successful population health managers.	150 High Risk Patients, 1:8 ratio of MD to care manager visits	Provider experience, data collection, 8 opinions of authorities, experts, and attendees perspective of programs	Case Studies, Peer Summit
Primary Outcome Measures/Results		Conclusions/ Implications				Strengths/ Limitations	Funding Source	Comments
1) Engage patients in the 99% of the time they are out of the system; must serve clinical and non-clinical 2) Use care mgmt science 3)High risk consolidated services 3b) Multi MD consolidated visits with f/u home visits 4) Continuum partners 5) Lower revenue expectations up front 6) ROI achieved under full risk in value-based reimbursement 7) Employer definition of value 8) Standardization across cost of care contracts		1) Community partnerships; engage and activate as “people” not “patients” in their own care 2) Use systematic standardized workflow;scale thru“industrialized care mgmt”. ID risk using multiple data sources; comprehensive asset should map to intervention strategies and execute well-defined, coordinated tasks; then discuss with person/family 3) Pts taken out of medical home/etc and seen by team in special clinic. Relationship and interaction accounts for better outcomes. Model increased office visits 43% but lowered ED, Hospital and average cost/day 3b) Technology focus; 1st hour with MD, 2nd with IP’s; used with Peds 50% in ED 4) Post acute care accounts for 50% of episode cost/major driver of cost. Three problems in post acute network; incomplete information on post acute utility and quality, inability to measure performance, lack of integration. Strategies regarding nursing home people, high volume. 5) CPI +1%. Offers great cost predictability for purchasers. Cost red re: utilization, increased staffing, supply chain efficiency. Organization recognized as high value provider, bond rating agency support in new market. 6) Global payment models that allow full control of premium \$. 10% red in utilization = margin impact +1.5%. “Cultural transformation” 7) Engage employers intel ex: right care, right time & right setting, right price, right life, best outcome. Each has definition and measures in article. 8) Standardize measures of care. Employers pick a narrower list of metrics.				S: Information from the field, barriers and opportunities identified L: providers’ opinion, potential for bias	Providers Employer	

Article/ Journal #2	Author / Year	Database/ Keywords	Research Design	Level of Eviden ce	Study Aim/Purp ose	Populatio n/ Sample sizeCrite ria/ Power	Methods/St udy Appraisal Synthesis Methods	Study tool/ instrument validity/reliab ility
Identifyin g Patients at Increased Risk for Unplanned Readmissi on/ Medical Care Vol 51, N 9, Sept 2013	Bradley , et.al/20 13	Quality, readmissio ns, hospital care	RCT	II	To estimate the association between a composite measure of patient condition at discharge, the Rothman Index, and unplanned readmissio n within 30 days of discharge.	Adult medical and surgical patients in a major teaching hospital in 2011/n = 12,844 initially then decreased to 5511 due to exclusion criteria of readmissi ons within 30 days of a previous discharge, admission s for observatio n only, LOS < 48 hours, patients who died during the hospital stay/ strong power	Rothman Index (RI) computed from 26 medical measures, RI was blinded to physicians and could not influence admitting, observation, or discharge decisions/ Outcome was a binary variable/ Data analysis using a statistical software, used a derivation dataset to determine cut-points, ranked discharges in the derivation dataset, used the Huber- White variance estimator	Hosmer- Lemeshow goodness-of-fit test, SAS 9.3, STATA 11, IRB review and approval at the Yale School of Medicine

Primary Outcome Measures/Results	Conclusions/ Implications	Strengths/ Limitations	Funding Source	Comments
<p>Unplanned readmission and patient condition at discharge/ 16% of sample patients had an unplanned readmission within 30 days of discharge. The risk of readmission for a patient in the highest risk category was >1 in 5 while the risk of readmission for patients in the lowest risk category was about 1 in 10. In multivariable analysis, pts with the highest risk category had 2.65 and 2.40 times higher odds of unplanned readmission compared to pts in the lowest risk category.</p>	<p>Clinicians can use the RI to help target hospital programs and supports to patients at highest risk of readmission. Documented a strong association between a measure of patient condition, the RI score, at the time of discharge and unplanned readmission with 30 days. The RI or similar indices can be embedded in the EMR and recalculated multiple times per day, thus providing a dynamic tool for assessing patient’s condition. The meaningful cut-points in the index can provide a practical way for clinicians to identify patients who might be a higher risk for unplanned readmission and intervene specifically for these patients to try to avert unplanned readmission. Automated integration of clinical data, including nursing data, into readmission risk prediction tools may be helpful in identifying patients at higher risks of unplanned readmissions.</p>	<p>several limitations: study was accomplished at only one hospital, the sample size was relatively modest, possibly limiting the power to detect significant interaction effects, lack of data on readmissions to other hospitals, did not have the data to directly compare findings with other prediction models, unable to adjust for other important factors including nonclinical factors such as socioeconomic and educational status of the patient, availability of family at home, social support, access to care.</p>	<p>Supported in part by the Commonwealth Fund, AHRQ T32 training grant, National Institute on Aging, Pepper scholar, Yale-New Haven Hospital, Perahealth Inc the company that developed the Rothman Index used in this research.</p>	<p>PeraHealth will make the Rothman Index available to researchers.</p>

Appendix L: Project Timeline**Timeline**

Capstone Proposal Presentation	Oct. 2014
IRB Approval	Nov. 2014 - Jan 2015
Project Implementation and Data Collection	Feb. 2015
Data Analysis	July 2015
Capstone Final Presentation	Aug. 2015
Publication	To Follow