Reducing Hospital Readmissions Using a Nurse Practitioner Led Interprofessional Collaborative Management Model of Caring: A Feasibility Study

REDUCING HOSPITAL READMISSIONS USING A NURSE PRACTITIONER LED INTERPROFESSIONAL COLLABORATIVE MANAGEMENT MODEL OF CARING: A FEASIBILITY STUDY

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As members of the DNP Project Committee, we certify that we have read the DNP project prepared by Michele Renee Birch entitled "Reducing Hospital Readmissions Using a Nurse Practitioner Led Interprofessional Collaborative Management Model of Caring: A Feasibility Study" and recommend that it be accepted as fulfilling the DNP project requirement for the Degree of Doctor of Nursing Practice.

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Final approval and acceptance of this DNP project is contingent upon the candidate's submission of the final copies of the DNP project to the Graduate College.

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STATEMENT BY AUTHOR

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DEDICATION

This work is dedicated to my parents, who encouraged me to pursue my goals and whose support and encouragement made this possible.

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ABSTRACT

The purpose of this DNP project was to determine the feasibility of implementing a nurse practitioner led interprofessional collaborative management model of caring for patients with complex medical conditions who are at high risk for ED and hospital readmission. The target of the feasibility study was an accountable care organization (ACO) in Idaho. The ACO assumes greater financial risk for providing care to a population that includes Medicare Advantage patients - dual insured Medicare/Medicaid patients. The care management teams are currently led by physicians.

The members of the population that suffer most from multiple chronic conditions often encounter barriers to accessing high quality primary care, in particular when transitioning between different levels of care. Interprofessional collaborative team based care coordination can address medical and social issues that can affect a patient's ability to achieve/maintain wellness. The literature suggests that nurse practitioners are ideally suited to lead those teams

Approval was given by leadership in the ACO to accomplish a study to determine the feasibility of successfully implementing an innovative NP led interprofessional collaborative care management model: the AEIØOU Bundle of Care Practices. Principles of qualitative descriptive methodology, using content analysis, were applied to explore the responses provided at individual interviews by thirteen key stakeholders. The data collected were not intended to be generalized, but rather to evaluate the potential for implementation of a new model of interprofessional collaborative care within the ACO.

Findings suggest that implementation of this model is feasible within the ACO. Common themes uncovered include: (a) change is challenging, (b) coordinated patient care aligns with

organizational goals, (c) success requires cost analysis, a comprehensive business plan, buy-in from primary care physicians, and a pilot program, and (d) strong support among all participants for NP and RN home visits was notable.

INTRODUCTION

Chronic diseases such as heart disease, diabetes type 2, obesity, and chronic obstructive pulmonary disease (COPD) accounted for over 85% of the total dollars spent on healthcare in the United States in 2010 (Centers for Disease Control and Prevention [CDC], 2016). Approximately 1 in 5 Medicare patients with chronic conditions are readmitted to the hospital within 30 days of being discharged, and an even greater number visit the emergency department (ED) within this time period. The Centers for Medicare and Medicaid Services (CMS) has demanded that hospitals implement strategies to reduce hospital readmissions (2016). To incentivize this, CMS has implemented programs such as the Hospital Readmission Reduction Program (HRRP), which applies penalties in the form of decreased reimbursement for Medicare patients readmitted within 30 days of hospital discharge. Medicare has chosen to apply penalties for hospital readmissions for patients with an initial admission of myocardial infarction, coronary artery bypass graft (CABG) surgery, heart failure, pneumonia, COPD, and elective knee and hip replacements (CMS, 2016). Hospitals can implement strategies to improve inpatient care, but they often have little control over the care the patient receives following discharge, which can have a significant impact on the need for and rates of hospital readmissions (Boccuti & Casillas, 2016). Nurse practitioners are poised to be at the frontline to respond to this healthcare mandate (Iglehart, 2014).

Background Knowledge

The members of the population that suffer from multiple chronic conditions often encounter barriers to accessing high quality primary care. A complex patient is defined as any patient with a chronic illness who also has one or more aggravating factors such as additional

medical co-morbidities, mental illness, socioeconomic concerns, or particular behaviors that complicate their care (Loeb, Binswanger, Candrian, & Baryliss, 2015). Many complex patients are uninsured or underinsured, encounter difficulties in finding a dedicated primary care provider, have difficulty with transportation to appointments, have low health literacy, have language barriers, lack financial resources to pay for needed medications and treatments, have inadequate time with the provider, fear judgement from healthcare providers, and feel they are not being listened to by their provider. Complex patients often have increased needs for care while simultaneously having decreased access to primary care services. The result is a greater utilization of the emergency department (ED) for routine care in addition to frequent health crises that could be prevented with regular follow-ups (Loeb et al., 2015; Schamess et al., 2016).

The availability of high quality discharge planning and care coordination are important factors in determining a patient's risk of hospital readmission (Robert Wood Johnson Foundation, 2013). In addition, coordination with outpatient primary care providers has the potential to reduce admissions (Boccuti & Casillas, 2016). Health literacy, the level of social support, the number of prescribed medications taken, and access to community resources influence hospital readmission rates (Henwner, Casucci, & Castner, 2016) Care management programs are designed to close the gaps between inpatient, acute care, and community based, primary healthcare (Hewner, Casucci, & Castner, 2016). Studies have established that population based care management programs reduce ED visits and hospital readmissions (Schamess et al., 2016). Nurse practitioner led care models have demonstrated positive outcomes for patients with chronic conditions (Kutzleb et al., 2015).

Local Problem

I am currently employed by a healthcare system in Boise, Idaho that is a Next Generation Accountable Care Organization participant (Next Gen ACO). As a Next Gen ACO, the organization assumes greater financial risk for providing care to a population that includes Medicare Advantage patients, dual insured Medicaid/Medicare patients, as well as several private insurers with whom value-based contracts have been negotiated. Next Gen ACOs practice patient-centered care, partnering with patients and their families to determine the best course of treatment. In addition, accountable care organizations are incentivized to provide services such as care management. In the organization where I am currently working, only physicians are recognized as care team leaders; nurse practitioners are not being utilized as leaders for care coordination. I have identified this policy as one where change could occur that could lead to improved outcomes in regard to the care of complex patients at high risk for ED or hospital readmissions.

Purpose

The purpose of this DNP project was to determine the feasibility of implementing a nurse practitioner led interprofessional collaborative management model of caring for patients with complex medical conditions who are at high risk for ED and hospital readmission. Complex medical conditions are those that meet one or more of the following criteria: life threatening or cause significant disability, affect multiple organ systems, cause significant pain, are predictors of negative outcomes, can result in a negative outcome for someone else, require frequent monitoring and/or need for a dedicated care giver, require coordination between multiple specialties, and conditions that involve treatment that can result in serious complications.

Patients with complex medical conditions often have difficulty effectively managing their health problems. In addition, these illnesses may require frequent admissions so complex treatments can be administered (Institute of Medicine (US) Committee on Serious and Complex Medical Conditions, 1999). Chronic illness or disease encompasses health problems that are persistent and last months, years, or a lifetime. Chronic illnesses are a strong component of a medically complex patient (Goodman et al., 2013). Patients with complex medical conditions often have multiple health conditions (acute and chronic), psycho-social and socioeconomic obstacles, and multiple healthcare providers involved in their care which results in the inability to effectively self-manage their care (Meyers et al., 2010)

Currently, complex care management at the Next Gen ACO is offered to a limited number of patients who must meet defined criteria. Patients must be part of the value-based population, have at least one of the identified high readmission risk chronic conditions, and be assigned to one of the participating primary care physicians. The physician must review and deem the patient appropriate for care management before the service can be provided. This process excludes a number of patients in need of complex care management putting them at high risk for ED or hospital readmission, and putting the organization at risk of financial penalties for not averting repeated acute care visits.

First, the project will clarify the roles and responsibilities of the current care management team members and barriers these stakeholders encounter. Next, the role of the nurse practitioner as Care Team Leader will be defined. Nurse practitioner competencies not only include diagnosing and treating medical issues, but offering patient-centered interventions, providing guidance and support to the patients and their families, and leadership of interprofessional

collaboration with teams (Kutzleb et al., 2015). A plan for implementation of the model will be outlined.

The United States continues to suffer from a shortage of primary care providers. Just as in many other states, this is an issue in Idaho, particularly the rural areas (Kaiser Family Foundation, 2017). Nurse practitioners working to the full extent of their education and licensure can assume this needed role including assuming the role as Care Team Leader ensuring that medically complex patients receive the coordination of care they need (Garson, 2013). Nurse practitioners provide care that is patient centered, high quality, and cost effective (Igelhart, 2014). In addition, nurse practitioners care for patients across the continuum and have experience working with multiple disciplines in caring for patients (National Organization of Nurse Practitioner Faculties [NONPF], 2013). These aforementioned reasons demonstrate nurse practitioners' qualifications for assuming the role of Care Team Leader when providing care management for complex patients (Kutzleb et al., 2015).

Through this DNP project, I explored the feasibility of implementing the AEIØOU Bundle of Care Practices. This new interprofessional collaborative care model incorporates: (a) **A**ccess to interprofessional collaborative team-based care, (b) an **E**ssential comprehensive health needs assessment, (c) **I**dentification and resolution of any gaps in care, (d) zero (**Ø**) days without needed medications, (e) **O**ccasions for assessing and engaging caregivers and family, and (f) **U**tilization of all available community resources, supportive services, and durable medical equipment (Russell-Kibble et al., 2015) (Appendix A).

Identifying and engaging key stakeholders is a fundamental step in the development and implementation of this new model of care. Stakeholders are people who have an identified

investment in a program or its results. Understanding stakeholders' needs, interests, and concerns is essential (CDC, 2012). The stakeholders identified, to participate in this feasibility study, include primary care physicians, primary care nurse practitioners, clinic administration, Care Management Program leadership, inpatient Case Managers, RN Nurse Care Advisors, Social Workers, Pharmacists, Community Health Workers, and clinic support: licensed practical nurses (LPNs) and medical assistants (MAs).

Study Question

What is the feasibility of implementing a nurse practitioner led interprofessional collaborative care management model in an accountable care organization, by utilizing the AEIØOU Bundle of Care Practices for patients with complex conditions?

FRAMEWORK AND LITERAURE REVIEW

Theoretical Framework

A bundle of primary care practices titled the AEIØOU Bundle of Care Practices is a new model of primary care innovated by an interprofessional collaborative care team participating in a grant related project. The Nurse Education, Practice, Quality and Retention (NEPQR) Initiative, funded from the U.S. Department of Health and Human Services (HHS) Health Resources and Services Administration (HRSA) grant was led by Family Nurse Practitioners (FNP) on faculty at The University of Arizona, College of Nursing (UA CON). The three-year project titled the Health360South Initiative, included Family Nurse Practitioners from the UA, CON imbedded within the College of Medicine – Family and Community Medicine (FCM) Primary Care Clinic at University Medical Center – South Campus in Tucson, AZ (Reel, 2012). The FCM Clinic provides teaching opportunities for FCM and Psychiatry Residents, Doctor of

Nursing Practice-Family Nurse Practitioner (DNP-FNP) students, Public Health students, and others, thereby maximizing the opportunities for interprofessional collaboration (Family Medicine Residency South Campus, 2017).

The care offered by the nurse practitioner (NP) led interprofessional collaborative care team in the Health360South Initiative has been provided to complex patients at high risk for ED or hospital readmission. The AEIØOU Bundle of Care Practices was created as one outcome of the Health360South Initiative. Outcomes from the Health360South Initiative continue to be evaluated, and the AEIØOU Bundle of Care Practices is being utilized to provide comprehensive, coordinated care for anywhere from 50 to 75 persons. Outcomes and evaluation of the project have not been published however, preliminary data suggests a significant decrease in ED and hospital readmissions 6 months after implementation of the new model of care (Blazek, 2015).

Primary care provided by an interprofessional collaborative care team using the AEIØOU Bundle of Care Practices continues to be offered to complex patients at the FCM UMC South Campus clinic. Two other primary care practice sites in Tucson, AZ have implemented this NP led interprofessional collaborative care model to provide care to complex patients (Russell-Kibble & Christianson-Silva, 2017).

Care bundles improve quality of care while standardizing delivery for improved patient outcomes. A bundle is defined as a set of evidence-based practices, when used together lead to a significant improvement in patient outcomes (McCarron, 2011).

The AEIØOU Bundle of Care Practices include: **A**ccess to team-based care coordination; an **E**ssential basic needs assessment; **I**dentification and rectification of gaps in care; **Z**ero (**Ø**)

days without essential medications; **O**ccasions for assessing and engaging family or close others in supporting patient care; **U**tilization of all available resources, services, and devices (Russell-Kibble, 2015). The AEIØOU Bundle of Care Practices supports comprehensive care for complex patients with chronic conditions by an interprofessional care team led by a nurse practitioner.

Concepts

Nurse Practitioners Are Natural Leaders

NPs are ideal leaders of care management teams because they are strong advocates for patient self-care. As the Care Team Leader, they provide a variety of services including counseling, discharge planning, illness monitoring, and care coordination (Kutzleb et al., 2015).

Nurse Practitioners Provide High Quality Care at Low Cost

In the current era, high quality healthcare that is efficient and cost-effective is in demand. Nurse Practitioners have been shown to be ideal providers of high quality cost effective care in primary care. Studies have demonstrated that patient outcomes are comparable to those of physicians and patients are often more satisfied with the care provided by nurse practitioners. Metrics have demonstrated that NPs are better at patient follow-up, allow for longer consultations, and do more screening, assessment, and counseling than their physician peers. In addition, the average office visit with an NP is reimbursed at a 20-35% lower rate than a physician visit (Naylor & Kurtzman, 2010).

Authentic Relationships

Caring is the foundation of nursing: through caring, authentic relationships are developed (WCSI, 2017). Authentic relationships are a key component of care management. Care managers establish security, genuineness, and continuity with their patients that foster an authentic

relationship. Authentic relationships have a positive impact on a patient's motivation to pursue and practice disease self-management (Grinberg et al., 2016).

Access to Patient-Centered Team-Based Care

Team-based care is care provided by two or more healthcare professionals who work collaboratively with patients and their families on shared goals which may span multiple settings resulting in high quality, coordinated care. An important component of team-based care is patient-centeredness, the patient is recognized as an important member of the team (Wen & Schulman, 2014). Patient-centered team-based care utilizes shared decision making resulting in a shared responsibility among all team members to share knowledge, preferences, and concerns regarding potential treatment options, but ultimately allowing the patient to choose his/her course. The great autonomy felt by recipients of team-based care has led to greater patient satisfaction and improved outcomes (Institute of Medicine, Committee on the Learning Health Care System in America, 2013).

Essential Needs Assessment

Multiple factors influence the health of an individual. To provide comprehensive care the interprofessional team needs to be aware of obstacles preventing the patient and family from achieving optimal health, this information can be gleaned from a comprehensive needs assessment (Institute of Medicine, Committee on the Learning Health Care System in America, 2013). By evaluating health determinants, the team can gain better understanding of the patient. Health determinants include social factors, policy, health services, individual behaviors, and biology (U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, 2017). Social determinants such as availability of healthy food, exposure to

violence, available social support, and reliable transportation can affect a patient's ability to successfully self-manage their health. Policy includes laws and initiatives run by local, state, and federal government that affect health such as seatbelt laws and implementing sexual education classes in local schools to prevent teenage pregnancy. Physical determinants include weather, housing, exposure to toxic substances, and physical barriers. Access to health services is a key component of patients being able to effectively manage their health, examples include availability, cost, and lack of insurance. For instance, a patient who does shift work may find it difficult to attend a clinic appointment if the clinic in only open Monday through Friday, 8 am to 5 pm. Evaluating individual behaviors such as diet, smoking, recreational drug use, and physical activity can assist the team in determining areas of focus for behavior change. Biology and genetics need to be evaluated, by collecting a comprehensive family history, the team can evaluate the patient's risk for inheriting certain health conditions. With this knowledge, the patient can receive education, discuss options, and interventions to promote health can be implemented. For example, if the patient has a strong family history of breast cancer, appropriate steps can be taken to engage a genetics counselor (U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, 2017).

Identifying and Resolving Gaps in Care

High quality care for medically complex patients requires collaboration between multiple providers, levels of care, and facilities, unfortunately these transitions can result in gaps in care that can lead to poor patient outcomes. Gaps in care are most often due to lack of communication, inability to establish eligibility for a particular service, and the lack of a healthcare provider willing to be the team leader when multiple providers are involved in the

patient's care (Tarrant et al., 2015). Care management can play a key role in resolving these gaps of care, with NPs assuming the role of team leader, fostering good communication, assisting patients in navigating the healthcare system, and educating patients so they are empowered to better self-manage their care (U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, 2017). Updating the current problem list with changes after reviewing care by specialists is one way to prevent the potential for gaps in care.

An extensive review of all obtainable medical records is needed to be sure that no significant diagnoses have fallen off of the patient's current problem list. This review can be done by the NP or an RN working together on a collaborative care team.

Zero Days Without Essential Medications

A key component of treatment for the vast number of patients with complex medical conditions is the use of prescription medication. Unfortunately, medication nonadherence is a significant issue, with approximately 75% of adults failing to take medications as prescribed. Thirty percent of the time, patients with chronic conditions, such as diabetes, never fill new prescriptions (PhRMA, 2011). The most common reasons for non-adherence are lack of understanding of the disease and treatment, lack of insurance or inadequate insurance, lack of transportation to the pharmacy, lengthy wait times at the pharmacy, side effects of the medication, poor patient/provider relationship, number and frequency of medications, lack of effective discharge planning, inability to keep/maintain regular medical appointments, and ineffective communication between healthcare providers. Interprofessional collaborative care teams, such as the one described in this proposal, can provide education and assist patients in accessing resources to improve medication adherence (Brown & Bussell, 2011).

In addition to requiring multiple medications that must be taken several times throughout the day, medically complex patients often require frequent dose adjustments. Data show that dose adjustments or the addition of new medications often result in decreased compliance which can lead to adverse outcomes that result in ED visits and hospital admissions. Care management allows for follow up with the patient to verify understanding of the medication changes and ensure that the patient has the resources to obtain the needed medication (Lin et al., 2012).

Furthermore, patients who run out of refills for essential medications will often end up in the ED. Providing the maximum number of refills for non-scheduled medications can significantly reduce this occurrence. Updating the medication list at each primary care visit is another way to assure that essential medications are being provided to patients.,

Occasions for Assessing and Engaging Family

For many patients, friends, family members, and/or caregivers support, influence or act as the primary managers of the patient's care. It is essential that the team inquire about other supports in the patient's life and integrate them into the care team (Institute of Medicine, Committee on the Learning Health Care system in America, 2013).

Utilization of All Available Resources

Utilization of community resources has demonstrated improved outcomes in patients with chronic illness such as diabetes. Unfortunately, many of these patients are unaware of available resources to support their healthcare and providers often lack the time to evaluate for non-medical needs or possess the knowledge of available local resources (Loskutova et al., 2016). Through the essential needs assessment gaps in care that can be ameliorated by provision of supports are identified, and patients are connected with available resources. For example, a

hunger screening tool was implemented in Colorado, in an effort to connect patients lacking access to nutritious food to community food pantries, food delivery services, summer food programs, and senior food programs. This screening tool, as well as the diabetes program implemented by Loskutova and colleagues (2016), demonstrate that when offered by a healthcare provider, patients will take advantage of resources, taking a step toward improved outcomes in care (Stenmark, Solomon, Allen-Davis, & Brozena, 2015).

Linking individuals with appropriate resources after a positive falls risk screening can prevent a lot of complications. Orders for durable medical equipment (DME) and referrals to physical therapy (PT) can provide a complex patient with safety and strengthening that can change their life in a significant way. Accomplishing a falls risk assessment during a home visit has additional value in supporting the provision of services and equipment to patients (Szanton et al., 2014).

Literature Review

Emergency department visits and hospital admissions account for a significant portion of healthcare spending. Care management models are designed to aid patients to self-manage their disease processes in order to eliminate or reduce unplanned and unnecessary ED visits and hospital readmissions. Multiple studies have demonstrated the benefits of nurse practitioner-led care management models in improving patient outcomes and reducing costs (Chen, McNeese-Smith, Cowan, Upenieks, & Afifi, 2009; Condon, Lycan, Duncan, & Bushnell, 2016; Kutzleb et al., 2015) (Appendix B).

Nurse practitioner-led care management models are most often implemented to assist across care transitions however some focus on patients who are in acute care settings or primary

care settings. One such model focused on reducing drug utilization and medication costs for patients in an acute care general medical floor setting in a hospital (Chen et al., 2009). Nurse practitioners served as the care team leaders, attending multidisciplinary rounds where NPs fostered interprofessional collaboration ensuring that interventions were completed in a timely manner. In addition, NPs maintained current medication lists, evaluating the need for each medication daily. Because of the NPs frequent contact with both the patient and the interprofessional collaborative care team, they could determine the earliest time a medication could be discontinued or changed from intravenous to oral administration. Transitioning patients from intravenous to oral medications is a significant step in preparing them for discharge and oral medications are typically less expensive than intravenous drug therapies. Less expensive medications coupled with earlier discharge can result in significant cost savings. Patients participating in this NP led care management model had significantly lower overall drug costs and significantly fewer drug days than the control group, with the intervention group having 66 drug days, while the control group had 80 drug days. The mean daily drug cost was $92 for the control group while the intervention had a mean of $89, total drug cost was $844 and $636 respectively. While this model and study demonstrated only one facet of healthcare spending, it illustrates the benefit of implementing NP led interprofessional care management models (Chen et al., 2009).

Dunn and Rogers (2016) utilized nurse practitioner led care management in the acute care setting to improve patient outcomes and reduce costs. In this study, pediatric nurse practitioners (PNP) assumed the role of discharge planner. The nurse practitioner worked closely with other members of the interprofessional collaborative care team, coordinating between the multiple

disciplines allowing for a timelier discharge for patients. In addition, the NP provided patient education, arranged follow-up care, prescribed needed medications, and determined and ordered any additional discharge needs. This innovative program resulted in patients being discharged 48 minutes earlier on week days. More significant however, was the finding the discharges completed by the NP were completed by 1 pm on average; prior to the implementation of this program, average discharge time was 4 pm. These improvements resulted in an increase in both staff and patient satisfaction. By facilitating earlier discharges, patients from the ED and recovery room can be transferred to the inpatient units in a timely manner, reducing unnecessary bottlenecks specifically on high census days (Dunn & Rogers, 2016).

Nurse practitioners have demonstrated success in leading care management programs across care transitions, many of these programs focus on caring for patients with specific chronic conditions. In one evidence-based practice project, congestive heart failure (CHF) patients were provided nurse practitioner led care management that began in the hospital and continued as the patient transitioned to primary care. As in other programs, the NP serves as the liaison among the multiple disciplines caring for the patient. While the participant was an inpatient, the NP assessed the patient's understanding of disease self-management including knowledge of the disease process, concerning symptoms, diet and exercise recommendations, and medication management. Socioeconomic and family/friend support systems were also assessed. Throughout the acute care hospital stay the NP maintained contact with the patient, and upon discharge patients were given an individualized care plan and enrolled in an outpatient telephonic program. Once the participant was discharged, the NP had regular telephonic contact to monitor the patient's ability to self-manage their disease and provide continued support and education for 60

days following discharge. Of the patients who participated in this program, 8% were readmitted within 30 days of discharge, 4% at 60 days, and 3% at 90 days. These rates are significant when compared to the group who did not receive NP led care management. Readmission rates for this group at 60 and 90 days were 27% and 29% respectively (Kutzleb et al., 2015).

A similar model was implemented at several Veterans Affairs hospitals. The care for a comparison group of CHF patients was managed by primary care physicians, defined as care as usual, while the intervention group was managed by a NP led care management team. This quasi-experimental prospective study occurred over a two-year period. Eligible patients had CHF secondary to systolic or diastolic dysfunction and symptoms of CHF within the two months prior to the enrollment period or hospitalized for CHF within the past 12 months. All participants had life expectancy greater than six months at the beginning of the study. Both groups were provided access to CHF clinical practice guidelines, but education and explicit integration of the guidelines occurred only in the intervention group. The NP led care management model utilized CHF guidelines to determine timelines for contacting patients, and scheduling follow up visits. Patient and family education was included in the model. Patients were assessed for other chronic conditions, and collaboration and referrals to other disciplines, such as social work, physical therapy, mental health support, were initiated as appropriate. The care as usual group had more all-cause hospital admissions and inpatient bed days as well as CHF related hospital admissions over a one-year period, than the group that was provided oversight by the NP led care management model. This trend remained true for all cause hospital admissions in the second year of the study. Patients in the NP led care management model were more likely to have CHF medications recommended by current heart failure guidelines, prescribed and titrated

appropriately, than the care as usual group managed by primary care physicians. For example, one year after enrollment 93.8% of patients in the intervention group were currently taking β-blockers, compared to only 89% in the care as usual group; 33.6% of the intervention group were taking spironolactone, while only 26.2% of the usual group were prescribed that essential medication. Those patients who received care from the NP led care management model had more clinic visits than the care as usual group. Concerning mortality, almost 28% of the patients were deceased by year two in the care as usual group as compared to 14% of the intervention group (Lowery et al., 2012).

The literature demonstrates that nurse practitioner led care management models and programs can produce positive outcomes for patients while reducing healthcare costs (Kutzleb et al., 2015). Equally important is a patient and family's willingness to be active participants in the program, as well as, the patient's overall satisfaction with the program (Institute of Medicine, Committee on the Learning Health Care System in America, 2013). Studies show that nurses, including advanced practice nurses, are ideally suited for the care management role and demonstrate the ability to develop trusting relationships with patients and family members (Grindberg et al., 2016; Komatsu & Yagasaki, 2014). The most important components in developing this trusting relationship is through the establishment of effective communication and the feeling that the patient's needs are recognized, validated, and being met as best they can (Hudon, Chouinard, Diadiou, Lambert, & Bouliane, 2015). The development of these authentic relationships motivated patients to be active participants in their care that led to optimal patient outcomes (Grindberg et al., 2016).

METHODS

This DNP project explored the feasibility of utilizing the AEIØOU Bundle of Care Practices to underpin the care management of complex patients at high risk of ED or hospital readmission in a Next Gen ACO in Boise, Idaho. Qualitative descriptive methodology utilizing content analysis was applied to underpin a study to explore the feasibility of implementing the new model of care in the current care practice. The data collected are not intended to be generalized, but rather to evaluate the potential for implementation of a new model of interprofessional collaborative care.

Design

Feasibility Studies

Feasibility studies are answering the need for determining whether an evidence-based intervention should be trialed (Bowen et al., 2009). Determining whether an intervention should be trialed is important in the fields of health promotion and disease prevention (Bowen et al., 2009). Bowen and colleagues provide a definition of intervention as "any program, service, policy, or product that is intended to ultimately influence or change people's social, environmental, and organizational conditions as well as their choices, attitudes, beliefs, and behaviors" (2009, p. 1-2). In this study, the stakeholders who would be affected by the implementation of this evidenced-based intervention are the current members of the team providing complex care management at the Next Gen ACO in Boise, Idaho.

Feasibility determines if something can be done (National Institute of Health Research, 2017). A feasibility study examines if a particular intervention can be realistically implemented in a particular setting, if so, should it be implemented, and how (Eldridge et al., 2016).

Feasibility studies are particularly indicated when “there are few published studies or existing data using a specific intervention technique” (Bowen et al., 2009, p. 2). This DNP project will be conducted to determine the feasibility of implementing a new model for the primary care of complex patients at high risk for ED or hospital readmissions utilizing an NP led care management model. Much of research is highly controlled, thus reducing its relevance in real world settings. Feasibility studies assess if a particular intervention is acceptable to stakeholders (Bowen et al., 2009).

Feasibility studies address several components: acceptability, demand, implementation, practicality, adaptation, integration, expansion, and limited-efficacy testing. Acceptability evaluates how stakeholders will react to the intervention. Demand assesses whether the intervention will be utilized. Implementation gauges the likelihood that the intervention can be executed as originally designed. Practicality weighs the resources needed versus the resources available for carrying out the intervention. Adaptation evaluates the extent to which an existing program can be modified as needs change. Integration assesses the extent that the organization must change for successful implementation. Expansion evaluates the potential that an existing program can be successful in a new setting or with a different population. Limited-efficacy testing allows for active testing of the intervention, with a small convenience sample. Adaptation, integration, expansion, and limited-efficacy testing will not be evaluated in this feasibly study because it is a new model of care that is being proposed (Bowen et al., 2009).

Through this feasibility study, an inquiry of the acceptability, demand, implementation, and practicality of the proposed model of care can be ascertained (Bowen et al., 2009). The project will specifically provide insight into the feasibility and potential for adoption and

integration of the AEIØOU Bundle of Care Practices for management of complex patients at high risk for ED and hospital readmission, with the current care management programs that are utilized at a Next Gen ACO in Boise, Idaho (Bowen et al., 2009).

Stakeholders were first asked to review an explanation about why the new model of care is being proposed. This explanation included a statement regarding the success of NP led models of care in improving patient outcomes. The NP will not take the place of the primary care provider, but instead work closely with them to ensure that high quality, coordinated care is being delivered. Because the NP serves as the Care Team Leader, they can serve as a liaison between multiple disciplines that may be involved in the patient's care. In cases where patients lack a primary care provider, the NP can serve in this role until the patient secures a PCP. This will be particularly helpful when patients experience extended waiting periods for a new patient appointment. Depending upon the needs of the patient, home visits can be conducted by members of the Care Management team including the nurse practitioner. Referral to the new care model can be initiated by inpatient and outpatient providers and staff, payers, patients, and family members. Enrollment criteria will include high utilization of the emergency department and frequent hospital admissions (more than three ED visits or hospital admissions in a six-month period), multiple chronic conditions, and/or the presence of socioeconomic conditions that are known to increase risk of repeat ED visits or hospital readmissions.

In order to better understand the model, a list of potential team member roles was provided. For example, in addition to the Care Team Leader and liaison, the NP, will provide patient education, and in communication with the PCP, place orders for patients as needed. The PCP is recognized as the patient's Family Medicine or Internal Medicine Specialist who directs

and provides ongoing medical care for the patient and authorizes interventions recommended by other members of the interprofessional team. The RN Care Advisor will complete patient needs assessments, make care/services recommendations, provide patient/family education, and be the patient's initial point of contact. Social workers will complete psychosocial needs assessments, provide counseling within their scope of practice, make appropriate referrals, connect patient and family with necessary resources, and provide patient/family education. The pharmacist will complete comprehensive medication reconciliation/review, identify potential interactions, make recommendations regarding medication regimen/alternatives, connect patients with necessary medication related resources and provide patient/family education. Licensed practical nurses (LPN) will provide support to the NP and RN Care Adviser in caring for the patient. Community health workers will provide support for social work and pharmacy in caring for the patient. Additional disciplines such as registered dieticians and occupational therapists may also be incorporated into the collaborative care team depending upon patient need.

Setting

This inquiry took place in Boise, Idaho at the flagship hospital and associated clinics of a local healthcare organization that is an ACO. St. Luke's Health System includes a 577-bed hospital providing outpatient, acute inpatient, and critical care for patients across the lifespan. The associated clinics provide comprehensive longitudinal primary and specialty care for urban and rural residents of the region (St. Luke's Health System, 2017).

Participants

Feasibility studies determine if a particular intervention should be trialed (Bowen et al., 2009). Key stakeholders in care management at St. Luke's Health System had invitations to

participate in the feasibility study extended to them by email (Appendix C) in order to provide their input in regard to the proposed change and addition to the current care of complex patients within the healthcare system. Being a person involved in care management at St. Luke's Health System was the only inclusion criteria for participation in the feasibility study.

Stakeholders are individuals who have an understanding of current processes and an interest in decisions related to the process and supporting evidence for care. Through the involvement of key stakeholders, trustworthiness in a change is increased. In addition, stakeholders are usually influential people who can champion and disseminate information regarding a proposed change (Agency for Healthcare Research and Quality, 2014). Potential participants in the feasibility study included licensed independent healthcare providers (physicians, nurse practitioners), registered nurses, case/care managers, social workers, pharmacists, licensed practical nurses, medical assistants, community health workers, and operational leaders who have experience with care management. Stakeholders may work in the community setting or the acute care setting. A determination of "non-research" was been granted from St. Luke's Health System Research Department and Institutional Review Board (IRB) (Appendix D). In addition, permission to request stakeholder participation from the staff at St. Luke's Health System was granted from administration at St. Luke's Health System. Since a determination of IRB approval was obtained from St. Luke's Health System, application for a Determination of Human Research for IRB approval was requested and granted from the IRB at The University of Arizona and the College of Nursing (Appendix E).

Feasibility studies are indicated when it is expected that new interventions are proposed and there is a need for purposive sampling that allows for gathering information from a limited

number of individuals who are potentially key to program implementation. Thirty potential participants were expected to be available to be recruited to this feasibility study, with optimum recruitment numbers being 30-40% (9-12) of the total (Bowen et al., 2009). In the end, there were twenty-four potential participants identified, and thirteen participants were interviewed. The recruitment numbers were excellent for the number of stakeholders involved (54%).

Data Collection

Information was collected utilizing a personal interview. The interviews were conducted by the project leader utilizing an interview guide (Appendix F). The focus of the questions was to inquire as to the acceptability, demand, implementation, and practicality of the proposed model (Bowen et al., 2009). Because stakeholders are busy professionals, physicians, nurse practitioners, nurses, pharmacists, and social workers, for example, who have varied schedules, obtaining an adequate number of participants may have been difficult, but was mitigated by offering the option of attending a focus group or scheduling an interview at the participant's convenience. The interview was kept on task by the interviewer in order to collect the necessary information in a limited amount of time. The interviews were audio recorded and transcribed for data analysis. Participants were informed of the recording prior to participating. In addition, the interviewer collected notes during the sessions. In the end, interviews, as opposed to a focus group were easier for the group to participate in.

The interview introduction included an explanation of the proposed project including a handout with a table that outlined the AEIØOU Bundle of Care Practices and how it could be integrated into the current care management system. The acceptability, demand, implementation, and practicality of the proposed program was highlighted in the questions asked of the

participants (Bowen et al., 2009). The questions had been reviewed by a doctorally prepared nurse from The University of Arizona, College of Nursing to ensure clarity, content accuracy, and comprehensiveness of the inquiry. The only demographic data collected pertained to the participant's professional role (e.g., physician, NP, RN, etc.). No other identifying data was collected. All other questions were open-ended allowing respondents to freely and completely provide feedback and express their opinions as to the feasibility of the proposed model of care. Follow up questions were asked as appropriate. A request to participate in the project was communicated either in person or via email after receiving approval from the IRBs at St. Luke's Health System, the UA College of Nursing Department Review Committee, and The University of Arizona IRB of this non-research DNP project.

Interview Questions

Acceptability

The acceptability of the implementation of the AEIØOU Bundle of Care Practices model for management of complex patients with the current care model that is utilized at the Next Gen ACO in Boise, Idaho will be evaluated with the following questions that was asked of the stakeholders:

1. After reviewing the description of the purpose for proposing a new model for the care of complex patients at high risk of ED and hospital readmission, how do you envision the AEIØOU Bundle of Care Practices will align with our organization's current goals related to promoting better health by providing better care at a lower cost?

Demand

Information on demand for the intervention is important to gather in order to be able to estimate usage of a proposed change. This topic was explored with these questions:

2. If the AEIØOU Bundle of Care Practices model of care for patients at high risk for ED or hospital readmission were in place today, how many patients come to mind that would benefit from this model of care?
3. What criteria would you use for selection of specific complex patients for referral?

Implementation

The feasibility of implementation of a change concerns the extent to which a proposed intervention can be fully implemented as planned and proposed (Bowen et al., 2009). Feasibility of implementation of the new model of care was addressed with these questions:

4. After reviewing, the roles and responsibilities provided in the explanation of the new model of care, how do you envision our organization implementing an interprofessional collaboration for NP led team-based care?
5. Implementation of the model can be accomplished by initially accepting a limited of patients via a pilot study in a small number of clinics or providers, then slowly expanding to include other clinics/providers. Do you believe the organization has resources to launch and support this new model of care?

Practicality

Practicality of implementation of the AEIØOU Bundle of Care Practices was assessed to explore the extent to which the model could be delivered given the need for resources and commitment.

6. What barriers do you anticipate to providing the personnel needed to support this model of care?
7. How might this program enable you to provide better care to your complex medical patients? How might it make it more difficult?

Additional follow up questions may be asked to allow the participant to expand on specific topics or so the interviewer may gather additional insight or clarification. Examples of these questions include:

1. What difficulties or barriers do you envision that would impede implementation of a bundle for care of complex patients?
2. Do you believe there is value in the organization providing support for home visits conducted by nurse practitioners and/or RNs as part of the new care management program?
3. What additional information would be helpful for you to make an informed decision as to your support for implementing the AEIØOU Bundle of Care Practices model for care of complex patients at high risk of ED or hospital readmission.

Qualitative Descriptive Methodology and Content Analysis

This DNP project used qualitative descriptive methodology and content analysis to examine the responses to an inquiry exploring the feasibility of implementing an NP led interprofessional collaborative care management program utilizing the AEIØOU Bundle of care practices as its foundation. A qualitative research design allows for the examination of participants' perceptions and values related to care management (Teherani et al., 2015). Qualitative descriptive research methodology is an ideal design for this project because one of its

main tenets is to examine shared experiences and interactions (Willis, Sullivan-Bolyai, Knafl, & Cohen, 2016). The ultimate goal of qualitative descriptive research is to gain knowledge through the examination of an individual's experiences from their own perspective (Sandelowski, 2010).

Qualitative research methodology is concerned with the depth of information gathered in a study (Davis, Powell & Lachlan, 2013). A feasibility study using qualitative descriptive methods will sample the participating stakeholders until no new information emerges, in what is called data saturation (Bowen et al., 2009; Davis et al., 2013). It is important that data collection occur with sufficient participants to assure that most or all of the important perceptions are uncovered (Mason, 2010). Recognizing recurring themes will help me, as lead on the project, to know when data saturation has occurred. O'Cathain and colleagues (2015) recognize that in feasibility studies researchers need to consider which themes warrant further data collection and when sufficient data are collected.

Content analysis critically analyzes language in an effort to classify large amounts of information into categories. These categories are further evaluated for the emergence of themes. These themes may arise from explicit responses or inferred communication. The intent of content analysis is to acquire knowledge of the phenomenon being studied. Directed content analysis will be the specific analytic approach used to evaluate the data collected. In directed content analysis, key concepts, such as the tenets of feasibility will be utilized to develop initial coding methods. This method utilizes open ended questions followed by more targeted questions in order to glean the desired information. Any data that is not represented by an existing category will be assigned a new one (Hsieh & Shannon, 2005).

Qualitative descriptive methodology depends upon certain tenets to provide trustworthiness in the information gathered in a study: (a) credibility, (b) transferability, (c) dependability, and (d) confirmability (Lincoln & Guba, 1985; Schwandt, 2007). Credibility is the amount of confidence in the results being a true representation of the study participants' views (Lincoln & Guba, 1985; Schwandt, 2007). Triangulation, peer debriefing, and member checks are ways that credibility can be established (Lincoln & Guba, 1985). Triangulation occurs when there are varying theories, investigators, and modes of information collection (Lincoln & Guba, 1985). Triangulation will occur through the independent analysis of data for themes by two investigators, and keeping field notes. Peer debriefing is being established by my regular contact with the DNP Project director who is both an experienced qualitative researcher, and a recognized expert on the topic of interprofessional collaborative care management, lending credibility of that choice as a true peer. Member checks occur by sharing of a thick description of the findings with participants for their feedback. The limitations of this feasibility study makes that step impractical.

Transferability is the principle assuring that the study findings can be applicable to other populations (Lincoln & Guba, 1985; Schwandt, 2007). The thick description should be recognizable to the majority of participants in the inquiry. A thick description is one that produces a thorough narrative of the situation, setting, and participants (Lincoln & Guba, 1985).

Dependability requires that findings were reliably obtained (Lincoln & Guba, 1985; Schwandt, 2007). It is the responsibility of the investigator to assure that the data are appropriately obtained.

Confirmability is the degree of neutrality, or degree to which participant responses are his or her own and not influenced by researcher bias (Lincoln & Guba, 1985; Schwandt, 2007). The field notes and the raw transcripts of the qualitative data obtained will help to establish the confirmability of the inquiry.

Reflexivity is the process of critical self-reflection that must be addressed to ensure trustworthiness in a qualitative study (Lincoln & Guba, 1985; Schwandt, 2007). Reflexivity is the understanding that a researcher's background influences what he or she chooses to study, the methods used, what findings are considered notable, and how these findings should be translated (Lincoln & Guba, 1985; Schwandt, 2007). Reflexivity will be mitigated through the use of field notes for recording reflections related to my values and beliefs in regard to what is occurring in the study. In addition, and methodological decisions made during the course of the study and reasoning will be included in my field notes (Lincoln & Guba, 1985).

The process of reflexivity also requires that I reveal any assumptions that I have that could possibly influence the inquiry. Assumptions that I hold are:

1. I work in an ACO where during the past three years, I have observed that patients with multiple comorbid conditions who have access to an interdisciplinary team of healthcare professionals and resources have fewer ED visits and hospital admissions than patients with similar comorbid conditions who do not have access to care management services
2. A contributing factor to a gap in the care management of complex patients is the lack of access to primary and specialty care providers and community resources.

3. Implementation of an NP led interprofessional collaborative care management model utilizing the AEIØOU Bundle of care practices as its foundation would result in improved outcomes in regard to caring, leading to a decrease in ED and hospital readmissions.

A thick description was produced from the interpretation of the data through content analysis. The data was independently reviewed by the project lead (myself), the DNP Project director who is a nurse researcher well versed in qualitative methodology and a member of this DNP Project committee who is also a nurse researcher well versed in qualitative methodology. Any incongruences in the analysis of the content of the data will be discussed until the investigators come to an agreement (Polit & Beck, 2012). The thick description was reviewed to ensure accuracy, and a mutual understanding that evidences credibility and transferability of the information gathered.

Ethical Considerations

This project is not research; however, the project leader ensured that information was collected objectively and potential respondents received impartial treatment and respect by utilizing the ethical principles of respect for persons, beneficence and justice.

Respect for Persons

Respect for persons includes the right for people to choose to participate in an inquiry or decline. In addition, participants have the right to know the nature of the inquiry as well as any risks and benefits of choosing to or declining to participate (Polit & Beck, 2012). Respect for persons will be met by including a statement that describes the project and language indicating that participation is voluntary and identified stakeholders who elect to take part in an interview

or focus group can choose to end their participation at any time during the process or refuse to answer any questions asked of them. Participants will be encouraged to ask questions prior to and while participating.

Beneficence

Beneficence requires that a concerted effort be made to eliminate or minimize potential harm to participants and maximize benefits (Polit & Beck, 2012). The chance of harm to respondents in this project is minimal. The only potential harm would be due to a breach of confidentiality. If others learned of a participant's responses and disagreed, a respondent may fear harm in the form of repercussions if his/her opinions were not aligned with leadership. This will be minimized by ensuring confidentiality: no names will be recorded and minimal demographic information will be collected, responses will be stored in a secure location.

Justice

Justice requires that participants be treated fairly and their privacy maintained (Polit & Beck, 2012). To ensure that the ethical principle of justice is followed, participants will be asked the same questions, responses will remain confidential, and whether an identified stakeholder chooses to participate or not will remain private.

Study Participants

Recruitment to this study was done by email. Thirteen (54%) of the twenty-four potential participants who received the email agreed to take part in this feasibility study. Participants were given the option to take part in a focus group or have a personal interview; all participants requested a personal interview. Positions held by the participants included social work, physician, nurse practitioner, pharmacist, nursing leader, registered nurse care manager, and

community health worker (see Table 1 for number of participants in each role). All participants were employees of the organization. Prior to proceeding with the interview, each participant was informed that the interview was being recorded for future transcription, no identifying information would be included with the exception of his/her current position. All potential participants affirmed that they were willing to proceed with the interview.

TABLE 1. *Participants' Roles and Number Participating*

Role	**# of Participants**
Nurse Practitioner	2
Physician	2
Nurse Leader	2
RN Care Manager	4
Social Worker	1
Pharmacist	1
Community Health Worker	1

FINDINGS

This feasibility study explored the concepts of acceptability, demand, implementation, and practicality to implementing a nurse practitioner led interprofessional collaborative care management model by utilizing the AEIØOU Bundle of Care Practices for patients with complex conditions. The themes that resonated throughout the thirteen interviews were: (a) the challenge is change, (b) connected patient care that aligns with organizational goals, (c) cost, buy-in, proformas, pilot the program, and (d) absolute, unconditional support for home visits.

> "*I think it's evident how (the model) is going to provide better care. This is exactly why a patient becomes a complex medical patient, because it's not coordinated and if we actually really step back and we had this model for the last 30 years we probably wouldn't be facing this concept of complex needs.*"

Acceptability

The concept of acceptability was explored with the first two interview questions. Exploring if the model aligns with the goals of the organization and if there is the patient population to support the program. Acceptability explores how those who would be impacted by the program, feel about the program (Bowen, et al., 2009). Participants agreed that the proposed program would align with the organizational goals of promoting better health by providing better care at a lower cost. One participant stated, "(The model) is focused on patient activation… we give patients this opportunity to develop the skills, and the knowledge and the motivation…" Participants noted that this program could benefit patients who utilize the ED for primary care and aid in transitioning patients between acute care and ambulatory settings. Once participant noted, "There is not a smooth transition right now from being inpatient to outpatient, to the clinic. There's a missing part in the patients' care."

Demand

Participants agreed that there is demand within the organization for an interprofessional nurse practitioner led care management program. While some participants felt there are a significant number of patients within the population served by the organization, specifically patients with chronic illnesses such as diabetes and heart failure, who would benefit. Other populations identified include those without primary care providers and high utilizers of the emergency department. While some participants were able to provide an estimate of potential patient participants, others were unable to commit to a number, but instead indicated that there was "a handful" of patients or "I know that the people exist because I've worked with them."

Suggested criteria for referral included multiple ED visits or admissions, diagnosis of "the key chronic illnesses", medication utilization/polypharmacy, and patients without an identified PCP.

Implementation

Examining the participants' views regarding implementation helped identify the potential for this program to be put into practice successfully (Bowen, et al., 2009). Participants overwhelming identified obtaining strong support and buy-in from primary care providers, specifically physicians, as a key requirement for successful implementation. One participant suggested eliciting support by demonstrating that "we're going to help you be a better doc." Team members can focus on addressing psychosocial concerns providing education and managing medications, so the physician can focus on daily tasks. One participant questioned whether physicians would support a program where a nurse practitioner is identified as the leader as opposed to a physician, stating, "our organization focuses on being physician led."

Acquisition of needed resources is vital to success of the project. Participants believe that the organization has the resources to implement a pilot study to test this new model. One participant cautions that the organization may have the resources, but may not have the capacity to support such a program. Multiple responses stressed the importance of starting small, with a small clinic or only a few nurse practitioners as providers. Another common theme was the recommendation to begin with one or two specific disease processes such as diabetes. One participant stressed the importance of a strong program model accompanied with a strong financial model or plan, in order to achieve success.

Practicality

Practicality evaluates the extent that an intervention is able to be carried out with existing resources and what positive or negative effects may impact those involved (Bowen, et al., 2009). Threats to practicality identified by the participants included financial concerns and fear or stress associated with change. As part of this change and to be successful, providers would need to modify their work day to allow for more frequent collaboration or review of notes from other members of the team. However, participants felt that this would lead to more coordinated care for patients.

Feasibility

Participants' responses suggest that implementation of this model of care is feasible within the organization. In particular, respondents overwhelming supported NPs and RNs conducting home visits to program participants. Obtaining support from PCPs – primarily physicians, selecting metrics that can demonstrate success in the short term, and a comprehensive business plan were key needs mentioned by participants.

DISCUSSION

Relationship of Findings to Theoretical Framework

The findings supported the theoretical framework, AEIØOU Bundle of Care Practices. Participants identified team based (Access) care and the comprehensive evaluation (Essential needs assessment) and identification of needs (Identification of gaps) by the team and resolving these needs (Utilization of resources) as important elements of the program. NPs were recognized by the participants as having the ability to recognize and collaborate with the PCP and pharmacist to identify polypharmacy, eliminate unnecessary medications, educate patients

regarding their medications, and ensure that patients have access to needed medications (Zero days). Supporting home visits and alternative strategies for providing care allow for the incorporation of family members and care givers and important members of the team (Occasions).

Comparison of Findings to Literature

Findings in this inquiry were consistent with the findings in the literature. Chen, et al, 2009) found that with the utilization of NPs, medication management was improved. Participants in this inquiry, including the pharmacist felt that this would be a likely outcome of the proposed program. Kutzleb et al., 2015 and Lowery, et al., 2012 both found that NP led care management programs resulted in better coordinated care and reduced patient readmissions, both outcomes that participants believed would result if an NP led care management program was implemented in the organization.

Strengths and Limitations

One particular strength of this inquiry was the ability of participants to provide their opinions in their own words, contributing additional information that can result in fuller, more meaningful response. In addition, by allowing for open ended responses, the interviewer gained a greater sense of the participant's understanding of the subject matter, in this case, the proposed care management program and model (McLeod, 2014). In addition, many respondents had similar responses, which suggested that saturation was reached. Data saturation is determined when no new information is uncovered (Sandelowski, 2008).

Another strength of this feasibility study was the presence of a negative case study. One participant- a registered nurse case manager, was adamant that an NP led care management program would not benefit patients nor the organization.

With the total number of responses to the call for participation in the feasibility study at 54% of the total invited, the chances are good that the participant responses to the questions are a reflection of the whole. Capturing interviews from a wide array of roles in the healthcare system is definitely a strength of this feasibility study, as that supports the concept of acceptability.

There were some limitations associated with this inquiry. A focus group interview might have led to different results with members of the group provoking more creative thought in one another. The interviewer effect must be considered. Some respondents' answers may have been influenced by verbal or nonverbal responses given intentionally or unintentionally by the interviewer (McLeod, 2014).

Trustworthiness and Reflexivity

Trustworthiness determines the worth of the inquiry and analysis and includes establishing credibility, transferability, dependability, and confirmability. One technique used to strengthen trustworthiness was to provide a thick description of the project, so it may be transferable to other organizations. A detailed description of the organization, its culture and the participants allow for this inquiry to be replicated outside of this organization. Trustworthiness is strengthened further by establishing credibility with the inclusion of a negative case study, which is data collected that is contrary to emerging patterns within the data (Cohen & Crabtree, 2006). In this inquiry, one of the registered nurse case managers did not feel that an NP led care management program would be beneficial for patients or the organization, with the exception of

patients without primary care providers. One reason identified by this participant was the added layer between the patient and provider that was seen as a barrier to achieving positive patient outcomes. Credibility was further strengthened through peer debriefing, which occurred between the DNP Project director and investigator. Dependability can be established through an inquiry audit, which requires an investigator not actively involved in the data collection to examine the data collection process and resulting data (Lincoln & Gupta, 1985). Dependability was further established by the investigator, as well as, the DNP Project director and a DNP Project committee member independently examining the data.

Reflexivity, is the understanding that a researcher's background and beliefs influence what he or she chooses to investigate, the approach taken to investigate a phenomenon, what findings are considered meaningful and how information is communicated and taking steps to mitigate this. Reflexivity is demonstrated by the independent analysis of data by the primary interviewer, the DNP Project director and a DNP Project committee member, in conjunction with triangulation to support confirmability (Cohen & Crabtree, 2006). The investigator was constantly aware of her assumptions and was determined not to integrate her feelings and biases into the study's data, thus preserving the integrity of the data and increasing the trustworthiness of the study (Polit & Beck, 2012).

Impact of Findings on the Organization

The findings of this inquiry suggest that the organizational culture is open to an innovative care model such as the NP led care management model. As with any change, there will be change avoiders and resisters (Porter-O'Grady & Malloch, 2015), one participant suggested utilizing the Influencer Model which focuses on defining measurable results,

identifying essential behaviors and utilizing the six sources of influence: personal motivation, personal ability, social motivation, social ability, structural motivation, and structural ability (Genny, Patterson, Maxfield, McMillan & Switzler, 2013).

Impact of Findings on Advanced Nursing Practice within the Organization

The findings of the inquiry recognize the value that nurse practitioners bring to the organization and the positive impact they have upon patient outcomes. All professions interviewed, including physicians, recognized the benefit of a nursing model in improving patient activation. Findings suggest that NPs are recognized by diverse disciplines within the organization, as being ideally suited to serve as care management team leaders. The result of this inquiry may lead to the development of a new and exciting role for NPs within the organization.

Impact of Findings on Advanced Nursing Practice

The findings of this feasibility study have the potential to serve as a model for implementation of NP led interprofessional collaborative care management models in other healthcare organizations in the US. The findings have further potential to impact which NP led interprofessional collaborative care management models are best suited to implement in healthcare organizations, that may include the AEIØOU Bundle of Care Practices for patients with complex conditions.

Implications for Future Implementation

The data gathered from this inquiry suggests that a nurse practitioner led care management program is feasible within the organization. The next steps are to develop a business case or proforma, for a pilot study. Because this pilot study will require reallocation of resources or additional resources, a business case identifying necessary resources, estimated

costs, financial goals, course correction options, estimated return on investment and how these all tie to patient safety and improved patient outcomes, will be developed for executive leadership review (Porter-O'Grady & Malloch, 2015). A pilot study allows for testing a new intervention on a small scale to allow for modifications prior to widespread implementation (Moran, 2017). As recommended by the participants, the pilot study would focus on a smaller, more specific population such as patients with diabetes who do not have an identified PCP. To gain approval for a pilot study a proforma or business plan will be developed

Implications for Further Study

Additional study is needed to explore patients' and caregivers' perceptions of care management programs. In addition, potential cost savings to the healthcare system needs to be evaluated, this information can assist in obtaining support for reimbursement of these programs by the Centers for Medicare and Medicaid as well as private insurance companies. Evaluation of complex patients' specific attributes including medical history and psycho-social factors may aid in earlier identification of patients who have the potential to become complex patients so early intervention with care management can occur.

Dissemination Plan

Dissemination of new knowledge is critical to the continued improvement to the nursing profession. Dissemination of new knowledge can result in cultural behavioral and practice change that result in improved outcomes for patients (Curtis, Fry, Shaban & Considine, 2016). The information gained from this feasibility study will be shared with organizational leaders, care management staff, study participants and members of the organization's System Nursing Research Council. A PowerPoint presentation summarizing key elements of the project will be

provided to these groups. A poster presentation can be produced for dissemination of information at a future nursing research/evidence-based practice conference.

CONCLUSION

Complex patients encounter multiple barriers to receiving high quality, coordinated care. Nurse practitioners have demonstrated competency as leaders and in providing patient-centered care that leads to positive outcomes for complex patients. The insight into key stakeholders' opinions on the acceptability, demand, implementation, and practicality of a proposed NP led interprofessional collaborative model of care using the AEIØOU Bundle of Care Practices, suggests appropriate next steps can be taken to modify or proceed with implementation plans.

APPENDIX A:

THE AEIØOU BUNDLE OF CARE PRACTICES

	Practice to Improve Care	Description	Metrics
A	Access to team-based care coordination	Access to NP Team Leader with providers from multiple disciplines that may include nurse practitioners, physicians, counselors, pharmacists, RN case management, dieticians, specialists or other auxiliary professional health care personnel.	• All patients and caregivers have contact information • Patient Care Team discussion and documentation of changes
E	Essential basic needs assessment	Essential comprehensive history and physical assessment is accomplished to evaluate the current medical, functional, and psychosocial status of the patient	• Comprehensive Risk Assessment accomplished at initial visit • Re-evaluation at intervals
I	Identification and rectification of gaps in care	Identification of gaps in care by thorough review of all obtainable records.	• Review of orders and problem list for accuracy and appropriateness at regular intervals
Ø	Zero days without essential medications	Zero days without essential medications by provision of timely and ongoing medication refill management for all medications prescribed for ongoing problems with interval review of the current medication list with PharmD: especially needed after ED or Hospital Admissions to reconcile medication management. Prescribing practitioner prescribes appropriate longest refill duration (not to include scheduled narcotics)	• Medications written with maximum number of refill orders (or exception noted) • No phone calls for refill requests
O	Occasions for assessing and engaging family or close others in supporting patient care	Occasions for engaging family, caregivers or contacts within the patient's immediate community.	• Names and telephone numbers of all caregivers listed in Care Coordination note in EHR
U	Utilization of available resources, services and devices	Utilization of all available resources, services, durable medical equipment. Referrals to specialty services to support care: Counseling: both in house and in the community, home health, safety evaluations, nutrition consults, long term care, medication reconciliation and medication management, durable medical equipment (DME)	• Follow-up discussion and/or note in EHR from all referrals

APPENDIX B:

LITERATURE REVIEW APPRAISAL TABLE

Project Question: What is the feasibility of implementing a nurse practitioner led interprofessional collaborative care management program in an accountable care organization, by utilizing the AEIØOU Bundle of Care Practices for patients with complex conditions?

Author / Article	Qual: Concepts or phenomena Quan: Key Variables Hypothesis Research Question	Theoretical Framework	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
Chen, C., McNeese-Smith, D., Cowan, M., Upenieks, V. & Afifi, A. (2009). Evaluation of a nurse practitioner-led care management model in reducing inpatient drug utilization and cost. *Nursing Economics, 27*(3), 160-168. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/19558076	Quantitative: Research question: Is a NP led care management intervention effective in reducing drug utilization and cost compared to usual care in general medicine patients?	Not identified	Retrospective data analysis of claims data	1207 patients – hospitalized acutely ill inpatients on a general medicine unit in a tertiary medical center- this group was divided into intervention and control groups	Outcome measures include: total drug cost, daily drug cost, and drug days. Subgroup data- antibiotic utilization. Cost data obtained from financial service dept. Descriptive statistics used: t test, Wilcoxon, chi-square tests used. Multiple linear regression and multiple logic regression used	Mean drug cost: $744 per patient. Experimental group spent significantly less $636 vs $844. Daily cost: mean of $92, experimental group $88.50 vs 95.80. Drug days less in experimental group. Due to: prophylactic drugs initiated immediately, dc'd after timely workup, conversion from IV to oral was timely. Better collaboration occurred among the care team of the experimental group patients

Author / Article	Qual: Concepts or phenomena Quan: Key Variables Hypothesis Research Question	Theoretical Framework	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
Condon, C., Lycan, S. Duncan, P. & Bushnell, C. (2016). Reducing readmissions after stroke with a structured nurse practitioner/registered nurse transitional stroke program. *Stroke, 47.* doi: 10.1161/STROKEAHA.115.012524	Quality Improvement – Purpose: to determine if a standardized transitional stroke clinic led by NPs can reduce 30 and 90 day readmissions for patients discharged home following a stroke or transient ischemic attack	Not identified	Single center prospective pre- and post-modification quality improvement project 2 phases-(1) NPs calling high risk patients within 7 days of dc and office visit within 2 weeks (2) all patients receiving dc phone call from RN within 2 days of dc and office visit with NP within 7-14 days	510 patients post stroke patients enrolled in transitional stroke clinic	Structured phone calls completed by NPs included mediation reconciliation, anticoagulation monitoring, reminders about scheduled therapy and other follow up, signs/symptoms of when to seek medical attention. High risk determined: ARF, CHF, 2 or more ED visits or hospitalizations in past year, on anti-coagulation, multiple barriers to care, poor social support. Data collected using TRACS program collection, multivariate logistic regression for 30 and 90 day readmissions	Transition stroke clinic visits (phone and office visits) resulted in 48% reduction in 30 day readmissions. Did not impact 90 day readmissions significantly. Multiple chronic conditions and hx of previous stroke increase risk of readmission.

Author / Article	Qual: Concepts or phenomena Quan: Key Variables Hypothesis Research Question	Theoretical Framework	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
Dunn, K. & Rogers, J. (2016). Discharge facilitation: An innovative PNP role. *Journal of Pediatric Health Care, 30*(5), 499-505. doi: 10.1016/j.pedhc.2015.10.004	Quality improvement- Implementation of PNP as discharge facilitator to quality, timeliness, and satisfaction of patient discharge	Not identified	Pre/post implementation evaluation	619 patients between November and February - pediatric inpatient unit ready for discharge at a large urban pediatric medical center	Compared data prior to creation of PNP discharge role to post creation data. Included: time from dc orders written to actual discharge time,	-48-minute decrease in time between dc orders and discharge -on average dc's completed by 1 pm with PNP model, Prior to role, patients typically not dc'd until after 4 pm- early dc decreased bottleneck of daily admissions/discharges -Improved Care team satisfaction -PNP facilitated communication among care team members- improved continuity of care
Grinberg, C., Hawthorne, M., LaNoue, M., Brenner, J. & Mautner, D. (2016). The core of care management: the role of authentic relationships in	Qualitative- identification of the core elements of an authentic relationship and how this relates to motivation and self-management	Not identified	In person interview	30 face to face patient interviews of participants of Camden Coalition care management programs. Mean age: 57.2 yrs., Race: 70% African American, 13%	Semi structured interview guide based on results of a previous study. Questions were both closed and open ended questions.	Motivation to participate in health management linked to relationship with care teams. Care teams described as security, genuineness, continuity key

Author / Article	Qual: Concepts or phenomena Quan: Key Variables Hypothesis Research Question	Theoretical Framework	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
caring for patients with frequent hospitalizations. *Population Health Management*, *19*, 248-256. doi: 10.1089/pop.2015.0097				white, 10% multiracial, 7% Latino. Almost 75% high school or less education. 76% had 5-9 chronic conditions,		factors in strong relationship
Hewner, S., Casucci, S., & Castner, J. (2016). The roles of chronic disease complexity, health system integration, and care management in post-discharge healthcare utilization in a low-income population. *Research in Nursing & Health*, *39*(4). 215–228. doi:10.1002/nur.21731	Qualitative- Explore relationships between chronic disease complexity availability of care management and ACO integration	Not identified	Observational study-retrospective "chart" review of electronic data from the New York State Medicaid Data Warehouse in 2013	Sample: adult patients, 220,482 with at least a 10-month enrollment in either fee for service or MCO Medicaid programs, patients <18, dual Medicare/Medicaid eligibility, and women hospitalized for delivery were excluded	Descriptive statistics used to determine differences in complexity, level of healthcare integration (ACO or not), and care management. Post dc utilization rates of ED, IP, and OP services were also compared	Readmissions were lower for patients in ACOs and MCOs, disease complexity, ACO membership, longer initial length of stay resulted in few readmissions within 90 days of discharge. Care management that improves continuity between care transitions are needed to reduce ED use and readmission within 90 days of discharge

Author / Article	Qual: Concepts or phenomena Quan: Key Variables Hypothesis Research Question	Theoretical Framework	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
Hudon, C., Chouinard, M. C., Diadiou, F., Lambert, M. & Bouliane, D. (2015). Case management in primary care for frequent users of healthcare services with chronic diseases: A qualitative study of patient and family experience. *Annals of Family Medicine, 13*(6), 523-528. doi:10.1370/afm.1867	Descriptive qualitative study Examination of the patient and family experience with care management	6 Dimensions of services integration model	descriptive	Convenience sample of 25 patients participating in the V1SAGES project at 4 family medicine groups in Quebec Canada	-Individual interviews comprised of open ended questions -Same Interviewers also conducted focus groups with subject family members -Interviews recorded and transcribed verbatim. Data analyzed by two researchers independently for themes, discrepancies discussed with co-researchers	-Nurse CM was patient's preferred contact -Patient and family members felt needs were addressed -Easy access to CM improved communication between care team (including provider) and patient and family. -Improved communication resulted in improved access to information for patient/family -Patient actively involved in decision making, choices respected -The CM improved coordination between community services/providers and care transitions

Author / Article	Qual: Concepts or phenomena Quan: Key Variables Hypothesis Research Question	Theoretical Framework	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
Komatsu, H. & Yagasaki, K. (2014). The power of nursing: Guiding patients through a journey of uncertainty. *European Journal of Oncology Nursing, 18,* 419-424. doi: 10.1016/j.ejon.2014.03.006	Qualitative – nurses' experiences with counselling for cancer patients, support services, nurses' values and beliefs in nursing	Grounded Theory	Focus group interviews- semi structured interview guide- open ended questions	4 focus groups consisting of 4-5 nurses (21 total) certified in palliative care, pain care, chemotherapy, radiation oncology, or breast cancer care. Certified Nurse specialists with counseling and support service included. -Live/work in Tokyo, Japan	Semi structured interview conducted by one author in Japanese, another author took field notes – interviews recorded and transcribed verbatim- line by line coding conducted by 2 researchers was used to identify themes/categories	Three themes identified the power of nursing in guiding patients through caner care -connecting with the patient-understanding the patient's needs, providing empathetic presence, importance of wholeness, connecting relevant information for the patient - Personalized coordination (shared action)- connecting the patient with appropriate professionals in a timely way, provide anticipatory guidance, nurses appreciate treatment limitations and can make plans for next step with patient's perspective in mind

Author / Article	Qual: Concepts or phenomena Quan: Key Variables Hypothesis Research Question	Theoretical Framework	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
						-realizing the patient's potential-focus on goals, focus on something positive not illness
Kutzleb, J., Rigolosi, R., Fruhschien, A., Reilly, M., Shaftic, A. M., Duran, D. & Flynn, D. (2015). Nurse Practitioner Care Model: Meeting the Health Care Challenges with a Collaborative Team. *Nursing Economics*, *33*(6), 297–304. Retrieved from https://www.nursingeconomics.net/ce/2017/article33062973004.pdf	Evidence-based practice- PICO- 312 adult patients admitted with heart failure provided NP-directed patient education (importance of compliance, diet, exercise, etc.) will demonstrated a reduction 30 day readmissions compared to the usual care group	NP Care Model- blend of physician and nursing care- interdependence recognized, NPs focus on providing care for patients and their families aligning healthcare objectives. NPs serve as the liaison between multiple disciplines, the patient, and the family	EBP- Iowa model	312 adult patients age 20-89 with heart failure confirmed by echocardiogram treatment began prior to discharge and continued in the outpatient telephonic portion of the program, patients classified NYHA classification system- low risk/high risk	-NP evaluation of patient's knowledge of HF -baseline 6-minute walk test prior to dc to determine functional capacity -Comparison between previous group (control) and current group receiving intervention	30-day readmission rate with intervention- 8%, without intervention (reviewing patient data from 12 months prior to study) 26% readmission rate

Author / Article	Qual: Concepts or phenomena Quan: Key Variables Hypothesis Research Question	Theoretical Framework	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
Lowery, J., Hopp, F., Subramanian, U., Witala, W., Welsh, D., Larkin, A., . . . Vaitkevicius, P. (2012). Evaluation of a nurse practitioner disease management model for chronic heart failure: A multi-site implementation study. *Congestive Heart Failure, 18*(1), 64-71. doi:10.1111/j.1751-7133.2011.00228.x	Quantitative: A comparison of patient outcomes in a nurse practitioner lead disease management model compared to usual care	Not identified	Prospective quasi-experimental quantitative study	969 veterans in six VA centers- 2 groups- control-managed by primary care physicians, intervention group managed by NPs educated on CHF clinical practice guidelines	Data was collected from the VA National Patient Care Database	The control group had more all- cause admissions, inpatient bed days and CHF related admissions over one year period than intervention group. -Trend remained for all cause admissions in year 2 -Intervention group more likely to have CHF medications recommended by current heart failure guidelines prescribed and titrated appropriately -Intervention had more clinic visits than the control group -Mortality, almost 28% of the patients in control group died by year two compared to 14% of the intervention group

Author / Article	Qual: Concepts or phenomena Quan: Key Variables Hypothesis Research Question	Theoretical Framework	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
Schamess, A., Foraker, R., Kretovics, M., Barnes, K., Beatty, S., Bose-Brill, S. & Tayal, N. (in press). Reduced emergency room and hospital utilization in persons with multiple chronic conditions and disability receiving home-based primary care. *Disability and Health Journal.* doi: 10.1016/j.dhjo.2016.10.004	Quantitative: Hypothesis: Enrollment of patients in with disability and multiple chronic conditions in a home based primary care program is associated with a decrease in ED visits and hospital readmissions	Not identified	Retrospective cohort study	-250 patients receiving home based primary care -records in the EMR were reviewed- ED visits and admissions three years prior to first home visit compared to these numbers 1-3 years after first home visit. -inpatient days and 30 day readmissions with cause also tracked (measured in 153 of the patients) -ED visits not associated with an admission (91 patients)	-Data reported in means and standard deviations -inpatient admissions, ED admissions, number of inpatient hospital days and 30 day readmissions per 1000 days calculated- pre-and post-enrollment	-Reduction in hospital admissions, hospital inpatient days, ED visits, 30 day readmissions per 1000 days occurred post interventions -of the 153-hospitalized pre-enrollment, 22% had no hospitalization post enrollment

APPENDIX C:

RECRUITMENT EMAIL

Dear:

I am conducting an inquiry into the feasibility of trialing a nurse practitioner led care management model within our organization. I am currently a student at The University of Arizona, College of Nursing in the Doctor of Nursing, Family Nurse Practitioner Specialty program. This inquiry is part of my final project. You have been identified as a stakeholder in care management whose opinions would be valuable to this query. I respectfully request your participation in either a personal interview or focus group. Personal interviews will be scheduled at your convenience and expected to last no more than 20 minutes. Focus groups will last no longer than one hour and will be scheduled after I determine the number interested in participating. Names of participants and specific opinions will not be shared beyond the interviews/focus groups.

I appreciate your time and attention and hope you will consider participating. I am happy to address any questions or concerns you may have. Kindly reply to this email, so that we can find a time to meet.

Thank you,

Michele Birch, RN MSN NE-BC

APPENDIX D:

IRB DETERMINATION LETTER: ST. LUKE'S HEALTH SYSTEM

St Luke's

July 24, 2017

Michele Birch

Re IRB Determination: ***Reducing Hospital Readmissions Using a Nurse Practitioner Led Interprofessional Collaborative Management Model for Caring: A Feasibility Study***

Dear Ms. Birch,

I appreciate your request for IRB determination regarding protection of the rights and welfare of subjects involved in the above referenced project.

The project seeks to improve clinical care. The project is not designed to develop or contribute to generalizable knowledge. The project is not likely to include individually identifiable information that requires protection. No subjects of this investigation are randomized. There are no non-standard practices, interventions or treatments. The project does not entail greater risk to individuals than would normally be anticipated under the standard-of-care.

The study meets criteria for a Performance Improvement (PI) project and not for human subjects research covered by 45 CFR part 46. IRB approval is not required. Results from the study may be presented or published outside of St. Luke's as long as the project is not referred to as research. For any extramural presentations where results of this PI project are revealed, it is required to avoid any use of the word research in a poster, any other representation of the project or in its verbal description.

Additional Notes:

1. This determination could be affected by substantive changes in the project design, subject populations, or identifiability of data. If the project changes in any substantive way, please contact our office for clarification.

2. Please note that federal regulators have made it clear that any publication describing a project as research must have prior IRB review and approval. Therefore, projects determined to be Evidence Based Practice (EBP)/Performance Improvement (PI)/Program Evaluation, etc., initiatives should not be published as research.

3. Also, some journals require evidence of IRB review if an activity discussed in an article is described as research. Please take caution as to the verbiage utilized to describe the activities outlined in the publication.

Thank you again for your inquiry. If you have further questions, you may call the IRB Office for clarifications at (208)381-1406.

Mailing Address:
Institutional Review Board
St. Luke's Health System
190 E. Bannock Street
Boise, ID 83712

Street Address:
Institutional Review Board
St. Luke's Health System
Washington Group Plaza, Plaza II
701 E. Morrison Knudsen Dr., Suite 104
Boise, ID 83712

St Luke's

Sincerely,

W. Mark Roberts, MD, MMM
Medical Director for Research and Medical Education
St. Luke's Health System

Mailing Address:
Institutional Review Board
St. Luke's Health System
190 E. Bannock Street
Boise, ID 83712

Street Address:
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Washington Group Plaza, Plaza II
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APPENDIX: E

IRB DETERMINATION LETTER: THE UNIVERSITY OF ARIZONA

Research
Office for Research & Discovery

Human Subjects Protection Program

1618 E. Helen St.
P.O.Box 245137
Tucson, AZ 85724-5137
Tel: (520) 626-6721
http://rgw.arizona.edu/compliance/home

Date:	August 15, 2017
Principal Investigator:	Michele Renee Birch
Protocol Number:	1708718508
Protocol Title:	Reducing Hospital Readmissions Using a Nurse Practitioner Led Interprofessional Collaborative Management Model of Caring: A Feasibility Study
Determination:	Human Subjects Review not Required

The project listed above does not require oversight by the University of Arizona because the project does not meet the definition of 'research' and/or 'human subject'.

- **Not Research as defined by 45 CFR 46.102(d):** As presented, the activities described above do not meet the definition of research as cited in the regulations issued by the U.S. Department of Health and Human Services which state that "research means a systematic investigation, including research development, testing and evaluation, designed to contribute to generalizable knowledge".
- **Not Human Subjects Research as defined by 45 CFR 46.102(f):** As presented, the activities described above do not meet the definition of research involving human subjects as cited in the regulations issued by the U.S. Department of Health and Human Services which state that "human subject means a living individual about whom an investigator (whether professional or student) conducting research obtains data through intervention ***or*** interaction with the individual, or identifiable private information".

Note: Modifications to projects not requiring human subjects review that change the nature of the project should be submitted to the Human Subjects Protection Program (HSPP) for a new determination (e.g. addition of research with children, specimen collection, participant observation, prospective collection of data when the study was previously retrospective in nature, and broadening the scope or nature of the research question). Please contact the HSPP to consult on whether the proposed changes need further review.

The University of Arizona maintains a Federalwide Assurance with the Office for Human Research Protections (FWA #00004218).

APPENDIX F:

FEASIBILITY QUESTIONNAIRE

Reducing Hospital Readmissions Using a Nurse Practitioner Led Interprofessional Collaborative Management Model of Caring: A Feasibility Study

Nurse Practitioner Led Care Management Programs have demonstrated success in improving patient outcomes, reducing emergency department visits, hospital admissions, and overall healthcare dollars spent. As a member of the current care management model caring for complex patients, I have identified a gap in the care of the most complex and vulnerable patients. It is in the spirit of collaboration that a new model of care is proposed to the current care team. This proposed model utilizes tenets of the AEIØOU Bundle of Care Practices outlined in the table below. In this model, the NP serves as the Care Team Leader; serving as a liaison among all disciplines involved in the patient's care. The NP will not take the place of primary care provider for those patients who have a PCP, but instead work closely with him/her to ensure coordinated, connected, comprehensive care. The NP can fulfill the role of PCP for those patients who do not have an identified PCP until one can be established or assume that role by working collaboratively and in communication with a physician in our ACO. Depending upon the needs of the patient, home visits can be conducted by members of the Care Management team including the nurse practitioner. Referral to the collaborative care management model of care can be initiated by inpatient and outpatient providers and staff, payers, patients, and family members. Enrollment criteria will include high utilization of the emergency department/frequent hospital admissions (greater than 3 ED visits and/or hospital admissions within a 6-month period), multiple chronic conditions, and/or the presence of socioeconomic conditions which promote increased risk of repeat ED visits and/or hospital readmissions.

AEIØOU Bundle of Practices to Improve Care of Patients at High Risk for ED or Hospital Readmission

	Practice to Improve Care	Description	Metrics
A	Access to team-based care coordination	Access to NP Team Leader with providers from multiple disciplines that may include nurse practitioners, physicians, counselors, pharmacists, RN case management, dieticians, specialists or other auxiliary professional health care personnel.	• All patients and caregivers have contact information • Patient Care Team discussion and documentation of changes
E	Essential basic needs assessment	Essential comprehensive history and physical assessment is accomplished to evaluate the current medical, functional, and psychosocial status of the patient	• Comprehensive Risk Assessment accomplished at initial visit • Re-evaluation at intervals
I	Identification and rectification of gaps in care	Identification of gaps in care by thorough review of all obtainable records.	• Review of orders and problem list for accuracy and appropriateness at regular intervals
Ø	Zero days without essential medications	Zero days without essential medications by provision of timely and ongoing medication refill management for all medications prescribed for ongoing problems with interval review of the current medication list with PharmD.: especially needed after ED or Hospital Admissions to reconcile medication management. Prescribing practitioner prescribes appropriate longest refill duration (not to include scheduled narcotics)	• Medications written with maximum number of refill orders (or exception noted) • No phone calls for refill requests
O	Occasions for assessing and engaging family or close others in supporting patient care	Occasions for engaging family, caregivers or contacts within the patient's immediate community.	• Names and telephone numbers of all caregivers listed in Care Coordination note in EHR
U	Utilization of available resources, services and devices	Utilization of all available resources, services, durable medical equipment. Referrals to specialty services to support care: Counseling: both in house and in the community, home health, safety evaluations, nutrition consults, long term care, medication reconciliation and medication management, durable medical equipment (DME)	• Follow-up discussion and/or note in EHR from all referrals

Examples of Roles and Responsibilities within a Nurse Practitioner Led Interprofessional Collaborative Management Model of Caring (not an inclusive list)

NP: Care Team Leader, coordinates care among multiple disciplines/serve as liaison, in communication with the PCP - places orders for patient as needed, provides patient education

PCP: Recognized as the patient's Family Medicine or Internal Medicine Specialist, directs and provides ongoing medical care, authorizes interventions recommended by other members of the interprofessional team

RN Care Advisor: Completes patient needs assessment, makes care/services recommendations, provides patient/family education, is patient's initial point of contact

Social Workers: Complete Social work needs assessment, provide counseling within scope of practice, make appropriate referrals and connect patient and family with necessary resources, provides patient/family education

Pharmacists: Complete a comprehensive medication reconciliation/review, identify potential interactions, make recommendations regarding medication regimen/alternatives, connect patient with necessary medication related resources, provide patient/family education

LPNs: Provide support to the NP and RN Care Adviser in caring for the patient

Community Health Workers: Provide support for Social Work and Pharmacy in caring for the patient

Measures of Success

- Number of ED visits and hospital admissions 6 months pre/post enrollment and 1 year pre/post enrollment
- Patient connected with needed community resources within 90 days of enrollment
- Patient has access to needed medications (per patient and care team evaluation)
- Patients' understanding and ability to self-manage disease processes have improved within 90 days of enrollment (Pre/post evaluation)
- Decrease in overall healthcare spending (1-year pre-enrollment, 1 year post enrollment, 2 years post enrollment)

Acceptability

1. After reviewing the description of the purpose for proposing a new model for the care of complex patients at high risk of ED and hospital readmission, how do you envision the AEIØOU Bundle of Care Practices will align with our organization's current goals related to promoting better health by providing better care at a lower cost?

Demand

2. If the AEIØOU Bundle of Care Practices model for care of patients at high risk for ED or hospital readmission were in place today, how many patients come to mind that would benefit from this model of care?

3. What criteria would you use for selection of specific complex patients for referral?

Implementation

4. After reviewing, the roles and responsibilities provided in the explanation of the new model of care, how do you envision our organization implementing an interprofessional collaboration for NP led team-based care?

5. Implementation of the model can be accomplished by initially accepting a limited of patients via a pilot study in a small number of clinics or providers, then slowly expanding to include other clinics/providers. Do you believe the organization has resources to launch and support this new model of care?

Practicality

6. What barriers do you anticipate to providing the personnel needed to support this model of care?

7. How might this program enable you to provide better care to your complex medical patients? How might it make it more difficult?

Additional Information

1. What difficulties or barriers do you envision that would impede implementation of a bundle for care of complex patients?

2. Do you believe there is value in the organization providing support for home visits conducted by nurse practitioners and/or RNs as part of the new care management program?

3. What additional information would be helpful for you to make an informed decision as to your support for implementing the AEIØOU Bundle of Care Practices model for care of complex patients at high risk of ED or hospital readmission.

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