Patient Self-risk Assessment for Hospital Readmission Reduction

By

JoAnn W. Noel-Graham MSN, RN, CPHQ

Patient Self-risk Assessment for Hospital Readmission

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APPROVED:

ANDREA REED, DNP, Faculty Mentor DocuSigned by: Andrea Reed 92A9635A2E9D48A...

BARBARA MILLER, DNP, DNP Project Team Member DocuSigned by: Barbara Miller

JOHANNA GASKINS, DNP, DNP Project Team Member DocuSigned by: Johanna Gaskins 76167C597DBE4BD...

ACCEPTED AND SIGNED

DocuSigned by: Sarah Gabua DNP, RN, CNE FEBBBA46CFF64B5...

SARAH GABUA, DNP

Program Representative

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Dedication

I would like to dedicate this project to my mom, Phyllis Scott, who always encouraged my educational endeavors. She spent countless hours sitting on the couch beside me while I did my schoolwork. Although she did not live to see me reach this milestone, I know her spirit is with me.

Abstract

Chronic disease continues to increase in prevalence due to an aging population and improved treatment options that are helping patients live longer. Reducing unplanned readmissions has become a priority for health systems due to financial penalties and star ratings. A lack of personal engagement in the treatment plan has been shown to affect patient outcomes. The project aimed to determine if using a patient self-risk assessment for rehospitalization would motivate patients to adhere to their treatment plan. A mixed-methods study measured the impact of a self-risk assessment for rehospitalization on hospital readmission rates for patients receiving home health services. The study was based on the Theory of Planned Behavior and assumed that patients would engage in their prescribed treatment if aware of the threat of hospital readmission. Home health patients were asked to complete the assessment and received the usual care for chronic disease management based on their diagnosis. Readmission rates were measured before and after the intervention using the Strategic Healthcare Program for analysis. The study did not show a significant change in the rate of readmissions for the home health agency over an 8-week period, although there was a difference in the study group. Limitations of the study include the short time frame for analysis and the use of all-cause readmission rates.

Keywords: readmission, nonadherence, self-risk assessment, chronic disease, Theory of planned behavior

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Reduction of Hospital Readmission

Chapter 1: Introduction and Overview

Chronic disease continues to increase in prevalence due to an aging population and improved treatment options that are help patients live longer. The possibility of hospital readmission is a financial burden for the hospital and affects the patient's quality of life. Reducing unplanned readmissions has become a priority for health systems. These hospitalizations reflect poor quality care and a lack of organized care transitions (Pauley et al., 2019). The more common chronic disease diagnoses leading to readmission are myocardial infarction, atrial fibrillation, chronic kidney disease (CKD), chronic obstructive pulmonary disease (COPD), and heart failure (Brunner-La Rocca et al., 2020). 19.6% of patients admitted with a chronic illness are readmitted within 30 days (Bamforth et al., 2021). Hospital readmissions for congestive heart failure account for over 20% of Medicare patients (Usinowicz, 2020). Chronic disease often transitions to acute illness and represents 63% of deaths worldwide (Loizeau et al., 2021). Cardiovascular disease is prevalent, with hypertension being a modifiable risk factor. Patients with chronic renal failure are at increased risk for readmission due to the complexity of their medication regimens and other comorbidities. Chronic renal disease ranks fifth on the list of frequent diagnoses for readmission, with 30% of patients, with end-stage renal disease experiencing an unplanned readmission within 30 days. It is estimated that 70% of these readmissions are avoidable (Omary et al., 2022).

Background of the Project

Patients suffering from chronic illness endure increased morbidity and mortality and are often readmitted to the hospital. Sixty percent of readmissions are preventable, leading to much work to determine interventions to reduce rehospitalizations (Bamforth et al., 2021). Medication

management is a challenging component of a successful transition from hospital to home due to complex medication regimens and polypharmacy (Kollerup et al., 2018). 21% of readmissions are medication-related, with 58% potentially being preventable (Uitvlugt et al., 2019). Heart failure is one of the top chronic diseases leading to hospital readmissions costing Medicare over thirty billion dollars in health care expenses related to this diagnosis (Bamforth et al., 2021). Medicare reimbursement for patients readmitted within thirty days occurs at a rate of one percent in the first year of poor performance and increases to three percent if poor performance is sustained for three years. Collaboration between physicians, case managers, post-acute providers, and the patient and their caregiver must occur. A comprehensive plan will give the patient the tools to successfully manage all the comorbidities that may impact their care. Chronic disease management programs that provide patient education and in-person support have been identified as critical in preventing hospital readmissions.

Reasons for readmission include clinical, behavioral, and patient-centered issues. The discharging entity, the provider, or the patient could all be responsible for factors leading to a readmission (Ryan et al., 2019). For example, ineffective discharge planning by case managers can lead to the patient being discharged without adequate support. The provider may not have given clear direction or expectations. The patient could also be responsible for not following their treatment plan or keeping up with follow-up medical appointments. Failing to follow dietary changes such as low sodium, fluid restrictions, and noncompliance with their medication regime can lead to cardiac decompensation in those suffering from cardiovascular disease (Verdu-Rotellar et al.,2020).

Quality of life is negatively impacted by patients dealing with chronic heart failure and other chronic illnesses. Many physical and psychological problems decrease the quality of life.

Dyspnea, weakness, and fatigue contribute to a decrease in functional abilities. This decline in practical skills limits the patient throughout their daily activities. There is an increased dependency on family members and friends and often a sense of role reversal (Avci & GNU, 2021).

Many patients falsely perceive the severity of their illness and delay decisions regarding end-of-life care. Heart failure, for example, is a progressive, disabling disease with a high mortality rate. In a qualitative study by Chica et al. (2020), researchers found that patients experience anxiety and sadness related to their illness due to fear of an exacerbation. Study participants also complained of poor communication with providers and felt cared for only when in the doctor's office or the hospital. In addition, many patients suffer from numerous comorbidities that make self-management challenging.

Nonadherence to medication regimens and other treatment modalities has increased hospital readmissions. Little is known about the reason for nonadherence, whether intentional or nonintentional, although multiple comorbidities and polypharmacy contribute to the problem (Seid, 2020). Drug therapy problems (DTP) in heart failure led to poor outcomes. DTPs are the main reason for hospital readmissions, and emergency room (ER) visits. 78% of patients visiting the ER have been reported to be due to drug therapy problems. Poor patient adherence has also been shown to be a factor causing patients to switch providers and be noncompliant with their treatment plans (Seid, 2020).

Social determinants of health (SDOH) contribute to readmissions and high healthcare costs. In high-need populations, poverty, poor housing, food insecurity, and a lack of access to healthcare affect health outcomes. Those with a low socioeconomic status have higher readmission risks with 80% of patient outcomes affected by SDOH (Murray et al., 2021). CMS

has prioritized social determinants of health and added inquiry into assessment forms such as the home care OASIS document. Clinicians are expected to assess the patient for SDOH and add interventions to the patient's care plan.

Statement of the Problem

Nurses have the responsibility to help patients with chronic diseases self-manage their disease process. Nurses have disease-management and self-management support skills that can benefit the patient. The Institute of Medicine's 2011 report, *The Future of Nursing: Leading Change and Advancing Health*, recommended that nurses take part in healthcare challenges today and play a critical role in caring for patients with chronic illnesses. Nurse-led interventions have been shown to lead to more favorable outcomes (Li et al., 2021). The development of a nurse-patient relationship is of utmost importance. A trusting relationship will lead to greater acceptability of the tasks needed to self-manage chronic illness. Hospital readmissions are a financial burden for the healthcare system and dramatically affect patients' quality of life. Including a self-risk assessment for rehospitalization will encourage the patient to engage in their care. The nurse's responsibility will be to give the patient the tools to succeed.

Readmission rates for the home health agency for 2021 were 11% for a 30-day readmission and 13% for a 60-day readmission rate (SHP, 2021). The goal for readmission is 10% for both time frames. The agency has had a *Call Me First* program to encourage patients to call home health before going to the emergency room unless they were in their red zone on their stoplight decision-making tool. It has been shown that an emergency room visit will lead to a readmission. This program has not been successful. The agency needs to use a clinician-led intervention to decrease hospital readmissions.

Purpose of the Project

The project aims to engage the patient in the self-management of their disease process. A self-risk assessment for rehospitalization will help the patient realize their potential to experience hospital readmission. The knowledge of their readmission risk will lead them to engage in their care and accept help and advice from their home health clinician. Readmissions are costly to the healthcare system as financial penalties are attached to the readmissions. The patient's quality of life is negatively affected, affecting the family and other caregiver support.

The project will be a mixed-methods design approach using qualitative and quantitative methods to determine what factors relate to nonadherence and the effectiveness of the self-risk assessment for rehospitalization. Inclusion criteria will be patients greater than 18 years of age admitted to a moderate-size home health agency with a primary or secondary chronic disease diagnosis following a hospital stay. The patient’s residence will be in both the North and South teams. The information will be gathered from the patient in their home setting after the study is explained and permission granted. The data will be collected by a Physical therapist (PT), an RN, and an LPN who have received education on the study. A PT was added to the clinician list of those participating in the study due to interest in the project. Also, chronic disease patients often receive therapy-only services post-hospital stay for debility and the need for strengthening. It is within the therapist's scope to provide education regarding self-management of the disease process. In a complex case, the therapist would get a physician’s order to add nursing to the case. The clinicians will facilitate the completion of the self-risk assessment form during the admission or second scheduled clinical visit. Follow-up phone calls will be made to answer questions and inquire about the patient's status.

Education provided to clinicians will include the purpose of the project and their responsibilities. The clinicians visiting the home will need to explain the study to the patient and obtain permission. Lines of communication will be developed with the student investigator and a regular check-in schedule. The chronic disease education will be reviewed with emphasis on the using of the stoplight materials (Appendix D) for the patient.

Quality Insights, the Medicare Quality Innovation Network-Quality Improvement Organization created the patient self-risk assessment form. The assessment is part of their best practice intervention package for reducing hospitalizations**.** It is to be completed by the patient to help them see their risk for readmission. It next asks the patient to determine their personal goal for improving health, followed by a series of questions whose answers show their risk of rehospitalization. The goal is to engage the patient in their care and stress the importance of self-management to avoid rehospitalization. There are Spanish versions for those patients in need. Interpreters are available if needed.

Research Question

Will a patient self-risk assessment for rehospitalization decrease the 30-day readmission rate for patients with chronic disease?

PICOT Question

For chronic disease patients currently receiving home health services *(Population)* does the use of a patient self-risk assessment tool *(Intervention)* vs not using the tool *(Comparison)* reduce 30-day hospital readmission rates *(Outcome)* over eight weeks *(Time).*

Theoretical Framework

The theoretical framework for this project will be Ajzen's Theory of Planned Behavior, Figure 1. The theory proposes that an individual's ability to engage in a specific behavior depends on their intention to perform it (Brookes, 2021). The theory is a cognitive theory developed in 1985 as s an extension of the concept of reasoned action developed by Ajzen & Fishbein 1975-1980. Intentions are formed by three variables-personal attitudes, subjective norms, and perceived behavioral control.

Personal attitudes are how we feel about a particular behavior. The attitude consists of two parts: affective and evaluation. Affective attitude reflects positive and negative feelings about performing a behavior. Evaluation attitude reflects the perceived advantage or disadvantages (Cheno et al., 2019). For example, in the case of a treatment plan for a patient with chronic illness, the individual may feel optimistic about obtaining the medications but pessimistic about remembering to take them. The patient may also think there is no advantage to taking the drugs and that they will not make a difference. These are areas to be explored with the patient to help facilitate ideas that will make a negative connotation more positive.

Subjective norms are the way others' ideas about the behavior are perceived. A supportive caregiver network can help facilitate adherence to the treatment plan. A tepid response and a sense that no one cares may foster nonadherence. Perceived behavior control is how one feels about engaging in the behavior. Strong self-efficacy would motivate the patient to adhere to the treatment plan and reinforce the thought that they can take their medications as prescribed, follow a prescribed diet, perform daily tasks such as blood sugar checks or daily weights, and keep up with follow-up medical appointments.

Behavior is an observable event and is composed of four elements: action, target, context, and time (Fishbein & Ajzen, 2015). In the situation of the chronic disease patient, their action would be adherence to the prescribed treatment plan, and the target would be preventing readmission. The hospital is the context over 30 days. The patient's defined treatment plan must follow medications, diet, and daily monitoring tasks, and attend follow-up visits to their physician or other care providers. Patients with many comorbidities such as diabetes and heart failure must follow their diabetic diet, monitor blood sugars and weights, and adhere to a medication schedule. Many patients and caregivers find their treatment plans overwhelming due to the time commitment and the need to remember the necessary tasks.

According to Brookes (2021), the theory of planned behavior is most followed in behavior management. A prediction can be made of a person's success in changing their behavior if there is a firm intention to change. The home health clinician is responsible for providing education, answering questions, and involving the family or other persons who may influence the patient's decision-making. The influence of family and the more significant social network is a crucial component of the theory of planned behavior. The family's influence is essential as it will affect the initial change in behavior and help to sustain it.

Behavioral intentions are based on readiness to change (Fishbein & Ajzen, 2015). Willingness to change occurs in the contemplation phase of Prochaska's theoretical model of change (Prochaska et al.,1997). This theory is based on the premise that a person will go through stages before acting on new behavior and sustaining it. In the contemplation phase, the person is thinking about making the change in the next six months and considering the price of the change. The proposal is that completing the self-risk assessment for hospitalization will show the patient the price for not following their treatment plan.

Significance of the Project

The purpose and significance of this project are two-fold. First, the quality of life for patients with chronic disease can be low and is affected by the fear of exacerbations and hospital readmissions. A nurse-led intervention, in collaboration with physical therapists, such as the patient self-risk assessment form for rehospitalization can benefit the patient. The assessment will help the patient be engaged in their care and improve their self-efficacy as they gain tools to self-manage their chronic illness.

Financial penalties that hospitals and post-acute providers encounter for readmissions can amount to a significant loss of revenue. Hospitals have star ratings that are publicly reported and influence consumers' care choices. Under future value-based purchasing, home health agencies will also receive financial penalties. The star rating quality measures for home health include a 60-day readmission rate. Star ratings are publicly reported and can influence the consumer's choice of home care agency. In addition, value-based purchasing brings with it a quality measure of potentially perceived preventable rehospitalizations, which is a measurement that occurs for a thirty-day period starting on day three after a patient is discharged from a home health agency (CMS, 2021). For this reason, readmissions must focus on quality improvement and implementing evidence-based interventions that reduce hospital readmissions.

Definition of Terms

Home Health: Skilled care is provided in the home by nurses, physical therapists, occupational therapists, speech therapists, medical social workers, and home health aides (CMS, 2022).

Nonadherence: A person's lack of following the advice of health care providers' advice, whether it be intentional or nonintentional (Seid, 2020).

Post-acute care provider: Care provided after a hospital stay in a rehabilitation facility, home health, outpatient therapy, or other outpatient settings (MedPAC, 2022)

Social determinants of health: Factors influencing health include education, housing, transportation, and finances (Murray et al, 2021).

Treatment plan: Interventions such as medications, diet, activity, and other prescribed modalities by the physician or primary care provider. (Student investigator, 2022)

Value-based purchasing: The Center for Medicare and Medicaid Services incentive payment program for delivering quality care. (CMS, 2022).

Nature, Scope, and Limitation of the Project

This mix-methods project will determine if using the self-risk assessment tool will lead to adherence to the treatment plan and decrease the 30-day readmission rate. Data will be collected over eight weeks, starting with the patient's admission date. The study will continue until there is enough for a statistically significant result. Central Limit Theorem (CLT) provides a foundation for sampling and probability. It is the basis for the "Rule of 30". It has been proven that a randomly generated sample of thirty or more elements approximates the population mean for anyone patient characteristic (Bondmass, 2014). The study group will be chosen from patients admitted to the home health agency. The readmission rate for this group of patients will be compared with the previous quarter using the Strategic Healthcare Program (SHP) database that creates outcome reports for the agency.

Patients chosen for the study must have been discharged from the hospital in the past 30 days. The referral can come from a physician's office, hospital, rehabilitation enter, nursing

home, or any other inpatient facility. Inclusion criteria will be Medicare or Medicaid patients, age 18 or older, admitted to the home health agency with a primary or secondary diagnosis that requiring chronic disease management. There needs to have been a hospital stay in the previous 30 days related to their primary or secondary diagnosis. The patient will need to agree to the study and consent by completing the questionnaire.

Exclusion criteria will be patients with no verified diagnosis and those without a hospital stay in the past 30 days. ICD-10 diagnosis coding requires that the official diagnosis applied to the medical record have verification by the physician or advanced practitioner in the history and physical or a progress note. The agency's primary investigator and the chart reviewers are ICD-10 certified and able to complete this requirement.

Limitations of the project include not having a large enough sample size to show a difference. It could also be limited by patients not wishing to participate. COVID-19 could be a factor if there should be a surge limiting the time the clinicians in the field would have to participate in the study. The use of all-cause readmission data will influence the readmission rates and the correlation of the tool's success.

Specifics, such as medication types and other treatment modalities, will not be studied as this is not the focus of the study. The study will not explore the reasons for nonadherence or behavior change. The theory of planned behavior assumes that all behaviors are intentional but do not consider emotions (Brooke, 2021), so for that reason, this will not be explored.

Time constraints are not a factor in completing the study as the nature of the work includes the responsibilities of myself and the clinicians in the field interacting with the patient. The use of the SHP database for readmission outcome reports is financed through the home health agency, and the student investigator has full use of the program.

Conclusion

Reducing unplanned readmissions has become a priority for health systems. Multiple readmissions indicate poor quality care and a lack of an organized transition of care. The possibility of hospital readmission is a financial burden for the hospital and affects the patient's quality of life. Nonadherence to medication regimens and other treatment modalities has increased hospital readmissions. Home health clinicians have the responsibility to help patients with chronic disease self-manage their disease process. Nurses have disease-management and self-management support skills that can benefit the patient. Nurse-led interventions have been shown to lead to better outcomes. It is within the scope of a therapist to provide education regarding chronic disease processes and self-management. Repeated hospital admissions decrease the patient's quality of life and lead to financial penalties for the hospital and other providers. A self-risk assessment for rehospitalization risk could help the patient adhere to their treatment plan and prevent hospital readmission.

A literature review supported the need to address the problem of hospital readmissions. Multiple factors contribute to the issue that affects the patient’s quality of life and the cost to the health system. Nurse-led interventions are needed to address the problem.

Chapter 2: Literature Review

An extensive literature review was conducted using CINAHL, PubMed, EBSCO, and the Center for Medicare and Medicaid Services website. Over 50 articles were chosen that contained information related to the cause of patient hospital readmissions, their cause, and the impact on the health system and quality of life.

Hospital readmissions are costly to the healthcare system and decrease a patient's quality of life. Readmissions are perceived as preventable and a source of poor care (Pauly et al., 2019). The reasons are multifaceted and include nonadherence, inadequate discharge planning, and poor provider/patient communication. A readmission occurs, for any cause, within 30 days of a hospital stay for heart failure, chronic obstructive pulmonary disease (COPD), myocardial infarction (Acute MI), pneumonia, or a joint replacement (Usinowicz et al., 2020). Much research on readmissions focuses on nonadherence but not on what precipitates it.

Hospital readmissions are considered an adverse outcome. Reducing hospital readmissions is an ongoing challenge for health systems that can lead to financial penalties. One in five discharged patients is rehospitalized within 30 days for an adverse event (Tong et al., 2018). Underlying comorbidities were associated with readmission even if the patient was not previously hospitalized. This finding is based on a large cohort study of 479,854 patients who had been readmitted (Pederson et al., 2019). Patients at risk for future readmission benefit from follow-up appointments within two days post-discharge (Tong et al., 2018). The self-risk for rehospitalization tool may encourage the patient to keep follow-up appointments.

Nonadherence does lead to an increase in readmissions. It is unknown if a self-risk assessment for rehospitalization will decrease readmissions by encouraging patients to engage with their care. The research will focus on using this form, reasons for nonadherence, and the

impact readmissions have on the healthcare system and quality of life. The Theory of Planned Behavior assumes that a person will be successful if they intend to perform a behavior (Brookes, 2021). The key will be to provide the patient with the tools to succeed if they have the intent. The Doctor of Nursing Practice project aims to determine if a self-risk assessment for rehospitalization will improve adherence to the treatment plan.

Conceptual Framework

The framework for this study will be the Theory of Planned Behavior (Fishbein & Ajzen, 2015). The clinician caring for the patient has an opportunity to help the patient explore barriers and give them the tools to create an intention to engage in positive care behaviors. Using the self-risk assessment for rehospitalization being studied will facilitate answering the research question. Will the use of a self-risk assessment for rehospitalization decrease hospital readmissions due to increased adherence by the patient to their treatment plan?

Patients will be placed in the study according to their chronic disease diagnosis when discharged from the hospital. Participants will be monitored over an eight-week period and receive the usual plan of care interventions-education on medications and disease-specific information. Each patient will be given a stoplight tool that tells them when to seek help from a healthcare provider.

The literature review will consist of research through Academic Search Premier, CINAHL, PubMed, and Medline using the search terms: readmission, nonadherence, patient self-risk assessment, risk assessment, noncompliance, chronic disease, social determinants of health, physical therapy, and theory of planned behavior. Fishbein and Ajzens' (2015) Predicting and changing behavior: The reasoned action approach will support the project. The research will be presented in subject area order. An attempt will be made to correlate the material with the

assumption that patients are often nonadherent and that using the self-risk assessment for rehospitalization will decrease readmissions.

Related Studies

The literature review discusses the high readmission rate related to chronic disease and its economic impact on the healthcare system. Many readmissions are preventable, with the cause being nonadherence or noncompliance with medications, diet, and other self-management activities. Failure to engage in self-management activities will lead to readmissions. Most risk factors such as smoking, alcohol consumption, and other harmful lifestyle behaviors are preventable (Baek et al., 2018).

As health care costs soar, clinical outcomes are on the decline. 13.3% of Medicare beneficiaries experience preventable hospital readmissions. Mortality has risen for patients with heart failure and other chronic illnesses since implementing the hospital readmission reduction program (HHRP). The higher mortality rate may be due to avoiding legitimate readmissions to 'game' the system (Psotka et al., 2020). In addition, many events occur outside the hospital system making risk-reduction tools used during the hospital stay only moderately effective (Chen et al., 2020).

An academic partnership was formed to identify evidence-based and potentially predictive variables for readmission based on a focused literature review. A group of researchers studied readmissions in a renal unit within a hospital setting with a high rehospitalization rate (Omary et al., 2022). The group found that readmission for renal disease patients could be predicted objectively using current lab data available in the electronic medical record. Research showed that a disease-specific model of determining readmission risk would be most beneficial when disease-specific variables are available.

High rates of preventable hospital readmissions occur with patients suffering from multiple comorbidities influenced by social determinants of health. High readmission rates are a tremendous cost to Medicare, leading the Center for Medicare and Medicaid Services (CMS) to implement the Hospital Readmission Reduction Program. Researchers at the University of Buffalo looked at greater than 19,000,000 index hospital admissions using the CMS database (Murray, 2021). Researchers determined a correlation between socio-demographic and -economic factors and hospital readmissions. Social determinants of health must be addressed when developing a care plan for chronic disease management.

Chronic disease often transitions to acute illness and represents 63% of deaths worldwide (Loizeau et al., 2021). Cardiovascular disease is prevalent, with hypertension being a modifiable risk factor. The theory of planned behavior has shown more utility than others, such as the health belief model in explaining behaviors related to noncompliance with self-management behaviors (Pourmand et al., 2020).

Cerebrovascular disease is a global health problem, causing disability, high recurrence rates, and increased mortality. An intervention study in China looked at the effects of the planned behavior theory on stroke patients' self-management behavior and quality of life. The control group received routine post-stroke education, whereas the intervention group received higher levels of education and follow-up and assessment of their quality of life. The study found that those in the intervention group benefited from the self-management interventions based on the theory (Li, Y et al., 2021).

With a descriptive, interpretive approach, a recent qualitative study found that patients often falsely perceive their illness and delay end-of-life decisions. Poor communication with providers is a concern expressed by patients and experience anxiety and fear as they worry about

having an exacerbation. Social support and consideration of the patients' values and circumstances are necessary to elicit a behavior change (Checa et al., 2020).

Consumers and providers must collaborate to make sound decisions regarding managing a chronic disease. A Cochrane qualitative evidence synthesis was performed at the University of Buffalo to evaluate randomized-control trials, quasi-randomized-control trials, and cluster randomized-control trials focused on consumer/provider partnerships and outcomes. The researchers found insufficient evidence to support the effectiveness of this intervention (Lowe et al., 2021). No studies investigated resources needed to make or act on decisions about health services. This is an area that needs to be studied.

A study conducted evaluating communication failures among physicians and home health nurses found a correlation between communication failures and readmissions. The communication error led to a 9.7% increase in the probability of hospital readmission (Pesko et al., 2018). The increase was prevalent in patients who were considered high-risk. All home health patients have a readmission risk assessment performed on every transition of care with actions to address this issue. Many factors influence the communication breakdown, primarily difficulty connecting with the physician. Often messages are left with office staff and not returned promptly.

In a prospective cohort study, Chen et al. (2020) used an interactive voice response system where a message was sent to the patient's home phone to elicit information regarding their current state of health. There was a high response rate, and they found that the complaint of pain [non-cardiac] was a strongly indicated a 30-day readmission. More research is needed on this phenomenon.

Regmi et al. (2021) conducted a retrospective cohort study from data extracted from an EMR. The groups were all patients discharged from an Illinois hospital over two years. Geographic data merged with clinical data, and a strong association was found between 30-day readmissions and the patient's access to transportation and disability. Regmi et al. (2021), concluded that hospital readmissions were affected by multifactorial parameters, including patient factors that include diagnosis, health state, existing comorbidities, and social aspects. The researchers felt that social factors must be considered when designing a treatment plan.

A comparison study of intensive home health nursing and physician follow-up versus less intensive care concluded better outcomes when close coordination between home health and medical providers (Murtaugh et al., 2017). Neither group showed a statistically significant change in the outcome of the patients, although there was an 8%-point difference in the results. The study discussion emphasized that Medicare heart failure patients have the highest all-cause readmission rate, the most considerable number of admissions, and the costliest group of patients. There was low strength of evidence that front-loading in-home visits led to better outcomes. Early physician contact after discharge has the potential to make a difference.

A systematic review and meta-analyses of randomized control trials found a correlation between patient outcomes and decreased readmissions when heart failure patients had post-discharge care provided by cardiac nurses. Researchers could not discern if there were a statistically significant association between the number or types of interventions. Interventions for COPD and chronic kidney disease (CKD) were sparse, and interventions were only effective in all-cause COPD readmissions (Bamforth et al., 2021).

Support for home health was evident in a mixed-methods study on home health in assisting patients to recover from a change in health status. A qualitative analysis showed a 37%

nonadherence, and quantitatively, there was an 8.7% noncompliance rate (Beckner et al., 2021). Six themes were evident in the qualitative data: communication breakdown, pharmacy error, caregiver omission, going without, unknown, and pill hoarding issues. Many patients went without filling prescriptions due to cost, lack of transportation, or no refills. Many attributing factors are modifiable if social determinants of health (SDOH) are addressed. These factors will be an essential concept for the project as a patient may intend to be compliant but does not have the means to achieve it.

Cardiac patients show an alarming nonadherence to medication regimens (Rapelli et al., 2022). Researchers designed a study to investigate the mediating role of a patient's self-efficacy in the link between adherence and activation. The longitudinal and didactic research with cross-sectional analysis found that self-management of the disease process was positively affected by dyadic coping. There were better outcomes when the patient had a partner for emotional support.

Li et al. (2021) conducted a meta-analysis of twenty-five randomized control trials that included 8422 patients. The analysis showed that nurse-led interventions effectively decreased all-cause and heart failure readmissions. Nurses have the skill set to provide disease-management and self-management support, including promoting self-care in those with chronic diseases. Although emergency room visits were not decreased, they did not lead to a higher readmission rate.

A cross-sectional analysis of information from the CARDIA (coronary artery risk development in young adults) showed that social support is needed to achieve a positive outcome (Oates et al., 2020). The analysis seeks to answer what affects a person's willingness and ability to follow medical advice. Medication adherence was assessed using the validated Morisky Medication Adherence Scale (MMAS-4 tool). Social factors were evaluated using the 8-item

chronic burden scale. Social support and strain became the theme, with nonadherence associated with an income of less than $25,000 and three to six social factors. Future research should be aimed at developing risk prediction tools to identify those needing targeted interventions.

Heart disease is a global issue and the leading cause of death worldwide. In a prospective cross-sectional study of 423 heart failure patients, it was found that drug therapy problems and nonadherence were significant. Patient satisfaction with their care and care provider was an area of concern that led to nonadherence issues (Seid et al., 2020). Developing a solid provider-patient relationship is instrumental in helping the patient successfully self-management of chronic disease.

A visiting nurse home healthcare program study found that medication management is one of the most challenging components to address in the transition from hospital to home (Kollerup et al., 2018). Disease management includes complex medication regimens that are difficult for patients to discern. Up to 94% of patients have discrepancies in their medication list, including discontinued meds, incorrect dosages, or frequencies (Kollerup et al., 2018). Polypharmacy necessitates the inclusion of medication teaching to help the patient adhere to their treatment plan.

Nonadherence is common in chronic diseases, with 60% of persons failing to take their medications as directed (Oates et al., 2020). Nonadherence leads to ineffective treatment, drug resistance, a decreased quality of life, and increased mortality and morbidity. Furthermore, there is higher utilization of health services and costs. These factors support the aim of the DNP project to determine if a self-risk assessment for rehospitalization will result in better adherence to the treatment plan, including medications.

Failure to adhere to medication affects a patient's health and finances and the status of the health system. A self-administered online survey was distributed to patients with chronic conditions living in Saudi Arabia cities, with 301 respondents (Altamimi et al., 2021). The main reason for noncompliance was forgetfulness and not having a primary doctor. Polypharmacy was also addressed as nonadherence increases as the number of pills or the dosing increases.

Nonadherence to medication changes during a hospital stay is associated with adverse events, including rehospitalization. In a prospective cohort study of 2655 patients, almost 50% do not adhere to some or all of their medication changes (Weir et al., 2020). Non-adherence may be due to a lack of education, health literacy, financial difficulties, or disregard for the importance of the changes. Functional health literacy correlates with increased length of stay and readmission rates. The ability to receive, understand, and process basic health information is necessary to make sound health decisions (Deshpande et al., 2022). These findings show that post-discharge education and nurse-led interventions will facilitate behaviors conducive to compliance with the treatment plan.

Numerous potential factors lead to decompensation in heart failure. Respiratory infection, noncompliance with medications, atrial fibrillation, and lack of following dietary recommendations are catalysts to this adverse event (Verdu-Robellar et al., 2020). The international [Europe] prospective cohort study focused on precipitating factors. The study found that noncompliance was associated with a lack of knowledge and diet. Respiratory infection was the frontrunner in potential factors.

COPD is a chronic disease where patients decline over time. Patients must learn to self-manage their disease state according to their symptoms to avoid hospital readmission. A systematic review to evaluate the efficacy of self-management interventions in COPD showed

that self-management that includes a written plan of action and interaction with healthcare providers can decrease readmissions and exacerbations (Lenferink et al., 2017).

Nonadherence to medication is a global problem. The WHO reported that, as of 2018, over four percent of all hospital admissions directly resulted from nonadherence to prescription medicines (Liddelow et al., 2020). There is, at times, an intention to obtain the medication, but the follow-through is missing. Using self-reported data, findings of a prospective study showed that perceived behavioral control was a significant predictor of intention to perform a behavior. This supports the use of the theory of planned behavior for this project.

A meta-analysis of greater than five hundred studies found that 25% of people do not adhere to prescription drugs for life-threatening diseases (Suh, 2021). Many researchers have used the theory of planned behavior, the health belief model, the theory of reasoned action, self-efficacy, and the transtheoretical model of change to explain this behavior. The Theory of Planned Behavior includes attitudes toward behavior, subjective norms, perceived behavioral control, and behavior intention. The Theory of Planned Behavior has effectively created interventions to influence the behaviors except in the person with optimistic bias. Optimism bias is a cognitive bias that causes someone to believe that they are less likely to experience an adverse event (Suh, 2021). The thought process will need to be explored when working with patients who have difficulty adhering to their treatment plan. The use of the self-risk assessment may affect the cognitive bias that causes the patient to rethink their belief of an adverse event occurrence.

A systematic review of thirty-five educational interventions showed a need for reeducation on the patient's plan of care and self-management strategies. Self-management is essential with family support and education for self-monitoring and medication adherence. Nurse

home visits were more effective for readmission than case management and disease management programs (Ryan et al., 2019). Patients need individualized strategy plans that will work for them in their situation.

Methodology Framework

The proposed study will be a mixed-method study using a convenience sample of home health patients discharged from the hospital with a chronic disease diagnosis. Patients chosen to be in the study, and offered consent, will complete a self-risk assessment for rehospitalization on the admission visit or visit two. They will receive the standard protocol, disease-specific, for chronic disease patients of the agency. The protocols include education on medications, diet, and disease-specific interventions such as daily weights and blood sugar monitoring if ordered by the physician. In addition, the patient will be given a magnetic symptom stoplight for the refrigerator to help monitor their symptoms and cue them to phone the agency or contact 911 for immediate medical attention.

There will be two nurses and a physical therapist in the field who will help facilitate the filling out forms and answering questions. The clinicians will receive education regarding the study and its responsibilities. Furthermore, they will assist with any needed follow-up phone calls to patients and notification of any hospital readmissions. A systematic review of randomized control trials to highlight the effects of nurse-led education found that nurse-led interventions contribute to decreased readmissions, improved quality of life, and savings in healthcare dollars for heart failure patients (Rice et al., 2018).

Impairments in activities of daily living have been shown to increase the probability of readmission. A physical therapist on the task force will add value to the study. Poor physical function at the time of hospital discharge has shown a 25% increase in the chance of hospital

readmission (Falvey, nd). Physical and occupational therapy included in the home health plan can help overcome this issue as the therapists provide strengthening activities while supporting a self-management approach.

Conclusion

Research has shown that hospital readmissions are often preventable and costly to the health care system. As health care costs soar, clinical outcomes are on the decline. 13.3% of Medicare beneficiaries experience preventable hospital readmission. Statistics show that one-half of those diagnosed with health failure will die within the first five years, with a 40% readmission rate to the hospital. Medicare heart failure patients have the highest all-cause readmission rate, the most sizable number of admissions, and the costliest group of patients. There is a sense of urgency to reduce all chronic disease readmissions to improve the quality of life for patients and avoid financial penalties for the health system. The use of the patient self-risk assessment for rehospitalization may be a tool that motivates the patient to adhere to their plan of treatment. The project will add to the body of nursing knowledge as there is a gap in the literature regarding patient self-risk assessments.

A mixed-methods project will be designed to determine if the patient self-risk assessment will be a useful tool to improve patient engagement and decrease the overall readmission rate of the home health agency.

Chapter 3: Methodology

The project aims to find if using a patient self-risk assessment for rehospitalization, along with the usual outpatient care, will decrease the readmission rate for home health patients with chronic disease. The assumption is that the risk assessment will show the patient their risk for rehospitalization, causing them to be more engaged with self-management of their disease process. A key element of self-management of a chronic illness is medication adherence, diet, exercise, stress relief, and follow-up medical appointments (While, 2020). This evidence-based project is essential as one-third of all adults are diagnosed with multiple chronic diseases (Foo et al., 2020). In addition, many home health patients are Medicare, over 65, and suffer from various comorbidities.

Based on Ajzen's Theory of Unplanned Behavior, the project proposes that a person's ability to engage in a specific behavior is dependent on their intention to perform it (Brookes, 2021). Perceived behavioral control is a significant predictor of the intention of to perform a behavior (Liddelow et al., 2020). Therefore, self-management interventions based on the theory of planned behavior are beneficial for improving self-management ability and quality of life (Li, Y. et al., 2021). Self-management of a chronic illness will decrease hospital stays and improve quality of life.

Clinicians must address these factors at a home health admission while assessing the patient's intent to address such issues. Nurse-led interventions have led to greater outcomes (Li, M. et al., 2021). Therefore, the development of a nurse-patient relationship is of utmost importance. A trusting relationship will lead to greater acceptability of the tasks needed to self-manage this chronic illness.

Physical therapists may be the primary clinician in the home providing care. It is within a physical therapist's scope to address medication and chronic disease management. The therapist's interventions are valuable and can lead to favorable outcomes (Faley, nd). The therapist will assess the needs when initiating the care during the admission visit. Patients who suffer functional decline have an increased risk of readmission; therefore, therapy at the home is beneficial (Collins et al., 2019). Therapists also have the expertise to evaluate nutrition and hydration, medication regimens, pain management, and prevention of pressure ulcers (Collins et al., 2019).

Chronic disease often transitions to acute illness representing 63% of deaths worldwide. A partnership between healthcare professionals and the patient to develop a positive environment will enable them to reorganize their lives and cope with their chronic disease (Loizeau et al., 2021). Nurses need to empower patients to gain the support of family and caregivers and obtain the knowledge they need to self-manage their illnesses. The influence of family members is instrumental in a person's belief that they can perform a positive behavior (Li Y et al., 2021).

The doctoral nursing project is a mixed-methods study collecting qualitative and quantitative data. The student investigator will collect qualitative data about the patient experience, barriers, and incentives to follow the treatment plan. Quantitative data will be assigned a value to the number of patients readmitted and the agency readmission rates. It is hoped that decreased readmission rates will improve the quality scores of the agency and the quality of life for the patients served.

Project design

The project, a mixed-methods study, will allow for the collection of valuable information about patient experience with chronic illness. The student investigator will be able to show

documentation of the readmission rate related to the project intervention. Quantitative data is objective, while qualitative data is a study of the phenomena experienced by the study participants (Irwin, 2014). People experience illness in diverse ways leading care to be individualized. The experimental study will compare a group of home health patients who used the self-risk assessment for rehospitalization against those who did not use the tool.

Qualitative data will be interviews with the patient to determine their barriers to self-management. Clinicians will interview the patients using the motivational interviewing technique to elicit patient obstacles and goals for self-management. Interviews will be conducted in person in the patient's home or telephonically by the student investigator or clinicians in the field. Patients will be asked questions about their thoughts on the severity of their illness and what barriers might keep them from participating in their treatment plan. Healthy behavior and self-efficacy benefits will be discussed (Lee et al., 2021). The patient will be asked what their goal is with a plan for success. Furthermore, notes taken and later reviewed will be examined for themes.

Motivational interviewing has been shown to impact the factors of anxiety, depression, sleep disturbances, and poor quality of life associated with increased hospitalizations (Rebora et al., 2021). Addressing the impact has been shown to improve health behaviors and clinical outcomes. The technique can empower patients to make healthy behavioral decisions and improve self-care management abilities by determining what they want to accomplish and giving them the tools needed to succeed.

Quantitative data will assign a value to the number of patients readmitted and the agency readmission rates. The readmission rate is determined using the Strategic Healthcare Program (SHP) database. SHP does a nightly sweep of the data looking for OASIS documentation that

shows the reason for readmission and when it occurred. OASIS is CMS's outcome and information set for home health documentation. SHP will send alerts via email on adverse events, readmissions, and conflicting documentation issues.

The student investigator will choose a group of registered nurses, licensed practical nurses, and a physical therapist from a group of clinicians determined to be interested and have been in good standing with the agency. They will receive education about the study and review the chronic disease protocols, including visit frequency and educational tools. A ZOOM link will be provided to present the education with time for discussion and questions. In addition, a weekly communication will occur via ZOOM or an Acano call to elicit feedback.

Sample and Setting

The project will occur in a home health agency part of a sizeable six-hospital health system in the Shenandoah Valley. The average daily census in the home health agency is 420 patients, with monthly admissions exceeding 350. Patients receive care over 60-day episodes, with some discharges occurring earlier if treatment goals are met. Services provided by the agency include skilled nursing, physical therapy, occupational therapy, speech therapy, home health aides, and medical social worker. Over 80% of the patients are on Medicare and over 65.

The project will use quota sampling, a type of convenience sample, where subjects are chosen with the necessary matching attributes needed for the study. The process reduces the possibility of selection bias and matches the target population. (El-Masri, 2017). In this case, the attributes are patients with a chronic disease discharged from the hospital in the past 30 days. Selection will be performed by the intake staff and communicated to the primary investigator. The primary investigator will then communicate with the clinicians in the field performing the admission.

Patients chosen for the project have been discharged from the hospital in the past 30 days. The referral can come from a physician's office, hospital, rehabilitation center, nursing home, or any other inpatient facility. Inclusion criteria will be Medicare or Medicaid patients, age 18 or older, admitted to the home health agency with a primary or secondary diagnosis requiring chronic disease management. Patients with commercial insurance will not be included as they do not have OASIS data collected that is needed for SHP to determine readmission rates. There needs to have been a hospital stay in the previous 30 days related to their primary or secondary diagnosis. The patient must agree to the study and consent by completing the questionnaire. The patients will live in the geographical areas covered by the field clinicians involved in the study.

Exclusion criteria will be those patients who do not have a verified diagnosis and those who have not experienced a hospital stay in the past 30 days. ICD-10 diagnosis coding requires that the official diagnosis applied to the medical record have verification by the physician or advanced practitioner in the history and physical or a progress note. The student investigator and the chart reviewers of the agency are ICD-10 certified and able to complete this requirement.

Based on the rule of 30, the sample size will be a minimum of 50 to allow for attrition. The rule of 30, based on the Central Limit Theorem, theorizes that a minimum of 30 elements is necessary for each variable under consideration (Bondmass, 2014). An online calculator for sample size calculation determined that a sample size of 201 would be needed to achieve a 95% confidence level with a 5% margin of error (Qualtrics, 2020). Since the endpoint will be binominal-only two outcomes, readmitted or not, a 50-subject study will indicate if the self-risk assessment form has value.

Instrumentation

The patient self-risk assessment for rehospitalization was created by Quality Insights, a branch of Medicare's quality innovation network. The tool is part of their hospital reduction plan, validated, and easy to use. The risk-assessment is a series of questions that will help determine the patient's risk of readmission. The patient is to complete the assessment independently or with the help of the clinician or caregiver. The form is also available in Spanish if needed. The paper, placed in the patient admission packet, will be presented to the patient during the admission visit or the first routine visit. Again, the clinician or family can help the patient complete the form, but the patient must participate to receive the impact of the answers.

Strategic Healthcare Program (SHP) will calculate the readmission rate. The program is used widely across the United States to calculate patient outcomes. Home Health outcomes are determined by collecting OASIS data on Medicare and Medicaid patients. The outcome and assessment information set are collected upon admission to the agency, and if hospitalized, a transfer OASIS is completed. SHP, as it combs the data daily, will retrieve that readmission information and send an alert to assigned emails. Rehospitalization reports can be run monthly, reporting a readmission rate based on total admissions, length of stay before the readmission, and index diagnosis.

Data Collection

The student investigator will collect quantitative data. The patient's ID number will be placed on an excel spreadsheet along with diagnosis, date of admission, and their case manager. Readmissions will be noted in a separate column with the date of readmission, the number of days since admission, and readmission diagnosis. In addition, the primary investigator will run

outcome reports monthly. No permission is necessary for the running of reports. The documents are electronically generated, accessed from any computer, and are password protected.

The clinician in the field or the student investigator will record qualitative data. The field clinician will record interview results in the intervention portion of the visit note using the synopsis or goal section. Phone interview information will be documented in the notes section of the chart under case communication and labeled as study information.

Data Analysis

Data will be analyzed to address whether using a self-risk assessment for rehospitalization will make a difference in the agency readmission rate. Readmission reports will be generated at four weeks and eight weeks using the SHP database and compared with the hospital EPIC reports to ensure that all readmitted patients are included in the count. The SHP report will show the readmission percentage, patient name, days on service before readmission, and the index diagnosis. In addition, resumption of care chart reviews performed by certified diagnosis coders will indicate readmission.

An actual 30-day agency readmission rate cannot be obtained until all patients admitted in 30 days have been in the database for a 30-day period. There may need to be some manual calculation to account for those patients who have been in service for less than 30 days. At the end of eight weeks, the 30-day readmission percentage rate will be the true number of those admitted during the first four weeks of the study.

Data Management Methods

All data downloaded from SHP is password protected and in a secure environment. Paper documents will be kept in a locked file cabinet in an office that is locked when not in use. The administrative suite in which the office is found is locked with a keyless password-protected

entry pad. Laptops used by clinicians in the field are password protected and are kept safe in a locked car or the clinicians' home. Those working from home use a computer that is password protected and use the health system's secure network.

Ethical Considerations

The study poses minimal risk for the patient. Care will be taken to consider the patient's wishes and feelings about participation. Patients will choose to take part participate or not by completing the risk assessment. The project will be presented to the Nursing Research and Evidence-Based Practice Committee at Winchester Medical Center for approval before implementation. The university-based internal review board and project committee will also review the study (Appendix E). The home health agency performance improvement committee will be aware of the project and provide support.

Internal and External Validity

Internal validity may be affected by intervention fidelity found in the presentation of the study to the patient. Although all clinicians will receive the same education before the study begins, individual communication styles may unintentionally affect the patient's response. The primary investigator can verify fidelity by making random joint home visits with the clinicians in the field to evaluate their presentation of the study.

External validity, or the ability to generalize the findings, may not be possible due to the non-randomness of the study. The null hypothesis will not be true, and further research with a larger study population will be needed to generalize the findings.

Conclusion

Decreasing readmissions is an issue that needs immediate attention. Along with the financial penalties that affect the health system, patients are affected by a lower quality of life

with multiple hospital stays due to readmissions. An increase in adherence to the prescribed treatment plan can reduce readmissions. The study will address using a simple self-risk assessment for rehospitalization that may cause the patient to become more engaged in the self-management of their chronic disease. A partnership between healthcare professionals and the patient to develop a positive environment will enable the patient to reorganize their lives and cope with their chronic disease. Nurses and therapists in home health need to empower patients to gain the support of family and caregivers and obtain the knowledge they need to self-manage their illnesses. The influence of family members is instrumental in a person's belief that they can perform a positive behavior. It is the clinician's responsibility to help the patient explore and overcome barriers. The project is an opportunity to add to the body of knowledge, those factors that prevent avoidable hospital readmissions. The results and discussion of findings address the v instrument’s validity and its use in the home health patient care plan.

Chapters 4: Results and Discussion of Findings

Chronic disease continues to increase in prevalence due to an aging population and improved treatment options helping patients live longer. The possibility of a hospital readmission is a financial burden for the hospital and affects the patient's quality of life. Therefore, reducing unplanned readmissions has become a priority for healthcare systems.

Patients suffering from chronic illness endure increased morbidity and mortality and are often readmitted to the hospital. Over two million patients are readmitted to the hospital annually in the United States at a $26 billion cost to Medicare (Belouali et al., 2022). Sixty percent of readmissions are preventable, leading to much work to determine interventions to reduce rehospitalizations (Bamforth et al., 2021).

Reasons for readmission include clinical, behavioral, and patient-centered issues. The discharging entity, the provider, or the patient could all be responsible for factors leading to readmission (Ryan et al., 2019). Many patients falsely perceive the severity of their illness and delay decisions regarding end-of-life care. The Reduction of Hospital Readmissions project aimed to engage the patient in the self-management of their disease process

Summary of Methods and Procedures

The study was a mixed-methods study using the patient self-risk assessment tool and the gathering of quantitative and qualitative data. The aim was to decrease the percentage of the agency's overall readmission rate and the percentage rate of the group completing the form. The home health agency readmission rate before the study was compared with the readmission rate after the completing the reassessment form. The percentage rate of the study group was calculated to compare those who completed the form against those who did not.

Qualitative data consisted of a review of visit notes and communication notes in the patient record and information collected by phone calls regarding patient-reported barriers. The clinicians document patient response to treatment and education on each visit note. Teach back is used to ensure that the patient understands the provided instruction. Communication notes communicate patient updates or concerns with other clinicians on the case.

The data collection tool for this project was the Strategic Healthcare Program (SHP). The program is designed to sweep the electronic medical record every 24 hours looking for discrepancies in assessments and documentation. The program generates outcome reports such as changes in functional status and hospital readmissions. The hospital readmission reports were utilized for this project. The report is run monthly to look for readmissions of the patients enrolled in the study.

The information of patients enrolled was kept on an excel spreadsheet using their medical record number as the identifier. A code sheet, only available to the student researcher, matched a number with a name to identify the patient when analyzing readmissions and other statistical data. Patients, who met the criteria, were enrolled after admission to the home health agency.

Documentation added to the excel spreadsheet included the admission date, chronic disease diagnoses, the number of readmissions in the previous six months, and the risk level for readmission to the hospital. The team helping with the project initially consisted of two registered nurses (RN), one licensed practical nurse (LPN), and two physical therapists (PT). The PTs and RNs have similar responsibilities with the LPN playing a slightly different role. The RN and PT perform admissions and create the Outcome and Assessment Information Set. As the study progressed, any clinician [RN or PT] who admitted the patient provided the education to

present the form to the patient. The increase in clinicians was put in place to increase the number of participants in the study.

Summary of Sample and Setting Characteristics

The project occurred in a moderate-sized home health agency that is part of a large health system. The patients chosen for the study were Medicare or Medicaid patients, 18 years of age and older, with a chronic disease diagnosis. Additional criteria included a hospital stay in the past 30 days. Most participants were aged 65 and older and included vulnerable population subjects. The participants lived in a rural area in a variety of home settings. Many had a live-in caregiver, and many lived alone.

Vulnerable subjects in the project were individuals that may not be able to advocate for themselves or lack the knowledge to understand the implications of participation. They included adults greater than 65 years of age, mentally challenged or confused, those financially challenged, and those who suffer from severe illness or disability. Many of those enrolled were Medicare and Medicaid eligible with many SDOHs.

The goal was to recruit 50 patients for the study. The rule of thirty, based on the Central Limit Theorem, theorizes that a minimum of 30 elements is necessary for each variable under consideration (Bondmass, 2014). An online calculator for sample size calculation determined that a sample size of 201 would be needed to achieve a 95% confidence level with a 5% margin of error (Qualtrics, 2020). Since the endpoint will be binominal-only two outcomes, readmitted or not, a 50-subject study will indicate if the self-risk assessment form has value.

Results

The project aimed to determine if using a self-risk assessment for rehospitalization would decrease readmission rates. There was an assumption that the patient would be more engaged with their treatment plan and improve self-management of their disease process. The project monitored patients admitted to the home health agency in September and October of 2022 that completed the patient self-risk assessment.

The final results for September and October were available on December 1, 2022. The time frame was necessary for 30 days to elapse for all patients admitted to the agency in September and October. The report, run on SHP, tabulates patients who were readmitted to the hospital and discharged. There is a direct link to the patient, allowing for detailed analysis.

The agency rate before project implementation was 15% (see Appendix B). There was a slight drop in September with a more significant decrease in October [10%]. The project group comprised 41 patients, with only one being readmitted. The sample size was not large enough to generalize the findings, but it does give credibility to the self-assessment form. Future exploration and evaluation of the form is needed.

The age range of the patients completing the assessment form was 55 to 94. The mean was 76 with the median being 78. Of the penalty diagnoses for the hospital-CHF, COPD, Acute MI, Pneumonia, and Joint replacement-four patients with COPD and CHF were in the group and were not readmitted. Diabetes occurred nine times with no readmission. As partners with the health system, although not all patients completed the self-assessment, home health prevent a readmission for eight patients in the penalty group.

The readmission rate amongst the project group was low (Appendix C). Forty-one patients completed the self-risk assessment form with one being readmitted due to atrial

fibrillation. The readmission rate of the project group was 2%. It is unclear if the self-assessment form led to the decrease in the readmission rate or if there were other factors related to the results. A larger sample size will be needed to generalize the value of the patient's self-risk for rehospitalization form.

Qualitative data was gleaned from phone calls to the patient by the student investigator review of the EMR of each participant, and communication with the clinicians in the field. One physical therapist stated that their patient of completed the self-risk assessment form which was reviewed with them. Although the patient was a great risk for readmission, they continued to engage in behaviors that were not in line with their treatment plan such as not checking blood sugars. The patient's nonadherence was distressing to the clinician as they made a significant effort to educate the patient on disease management.

Several patients canceled their visits and ended their care prematurely, although they did complete the assessment form. Necessary education was provided in the first few visits, and they could avoid a 30-day readmission. Canceling visits by the patient was a theme throughout the study. It is unclear if the canceling visits leads to a greater incidence of readmissions and will require further study.

SDOH were evident in many of the participants. Several patients had transportation issues getting to appointments. One patient was moving to Texas so his son could care for him. Social work was consulted to assist a patient with housing needs. Despite environmental and transportation issues, hospital readmission was avoided.

It is unclear if the self-risk assessment form was responsible for keeping these patients out of the hospital, but it is a tool of many that has value. Clearly, nursing interventions,

education, and the use of the social worker to address the transportation issues made a difference. Phone calls to the patients were appreciated, and they were forthright with their opinions.

Implications for Nursing Practice

Nurses have disease-management and self-management support skills that can benefit the patient. Nurse-led interventions lead to more favorable outcomes (Li et al., 2021). A tool that can help facilitate compliance in the patient can assist the clinician in motivating patients to be engaged in their care. The patient self-risk assessment form can be used to assist the patient in seeing the need for them to follow their treatment plan to avoid hospital readmission. Although the total readmission rate for the agency did improve, sustainability needs to be explored. One patient in the group completing the self-risk assessment form experienced a hospital stay. A more extended period would allow for a larger sample size to generalize the findings.

SDOH does influence health and chronic disease progression (Murray et al., 2021). The nurse can collaboration with social workers to connect the patient with community resources. Transportation can be arranged allowing the patient to attend follow-up appointments, food banks can provide for basic nutritional needs. Although the person’s living environment may not be changed, the nurse can help the patient to learn to live better in their current environment.

Conclusion

Decreasing readmissions remains a priority of the healthcare system. Financial penalties and the quality of life for patients are the motivating factors. Many factors contribute to readmissions that, include providers and patients. Nurses have a significant role to play in impacting this problem. The nurse can learn from the patient's barriers to following their treatment plan and offer solutions. The home health clinician, uniquely positioned, sees the patient in their environment. The living environment and other social determinants of health

(SDOH) contribute to non-adherence. The patient self-risk assessment for rehospitalization motivates the patient to comply with self-management of their disease process.

Chronic disease management aims to stabilize an acute exacerbation of disease and teach the person self-management techniques to return to a more normal state of health. Self-management techniques must consider the patient's living environment, and other SDOHs influencing health outcomes. Chronic disease often becomes acute, therefore, there is a need for prevention.

Chapter Five: Discussions and Conclusions

Chronic disease continues to increase in prevalence. Chronic disease management is necessary to maintain health and decrease healthcare costs. Common chronic disease diagnoses that lead to readmission are myocardial infarction, atrial fibrillation, chronic kidney disease (CKD), chronic obstructive pulmonary disease (COPD), and heart failure (Brunner-La Rocca et al., 2020). Chronic disease often transitions to acute illness and represents 63% of deaths worldwide (Loizeau et al., 2021). Readmissions and exacerbations of chronic illness impacts the quality of the patient's life and the financial security of the health system resulting in a need for action.

Chronic disease management aims to stabilize an acute exacerbation of disease and teach the person self-management techniques to return to a more normal state of health. Patients must learn to manage their illness by attending follow-up physician appointments, taking prescribed medications, and completing tasks such as daily weight and blood sugar checks. The patient needs to recognize the need for self-management and responsibility.

Ajzen's Theory of Planned Behavior proposes that an individual's ability to engage in a specific behavior depends on their intention to perform it (Brookes, 2021). The self-risk assessment can influence the patient by motivating them to do self-care. With knowledge, they will see the disadvantages of not following their treatment plan. Education by the home health team will help give them an advantage. Caregiver involvement will enable the caregiver to provide a positive attitude and support. All these factors will elicit positive behaviors that influence health.

Background of the Project

Patients suffering from chronic illness endure increased morbidity and mortality and are often readmitted to the hospital. Sixty percent of readmissions are preventable, leading to much work to determine interventions to reduce rehospitalizations (Bamforth et al.). Chronic disease management programs that provide patient education and in-person support have been identified as critical in preventing hospital readmissions.

Discussion of Findings and Best Practices

The home health agency readmission rate did not decrease after the use of the form was put into place, although the study group had a low percentage of readmissions. The sample size was insufficient to generalize the findings that the self-risk assessment effectively decreased readmissions. The results make it likely that a larger sample size over a longer period of time would have more value. Using the form as a standard part of the admission of all home health patients could lead to a more engaged patient population, therefore impacting the agency readmission rate.

Implication for Practice and Future Projects

The self-risk assessment form, as a standard practice for all home health patients, may assist in decreasing readmissions. The assessment and patient-specific education that addresses the patients' goals will lead to a more engaged patient. The development of patient goals will facilitate an individualized plan. The change of including the assessment as a standard part of the admission visit will take staff by-in. The admission visit can take significant time leaving the clinician no time for an extra step. Leadership could help design a process that streamlines the admission visit.

Although the assessment form proved beneficial, time constraints became evident as the study progressed. The admission visit is time intensive process involving a physical exam, medication reconciliation, and collection of OASIS data. Often there is education needed and a skill task such as wound care. These time constraints led to a smaller sample size, stress on the clinician, and overtime costs to the agency.

The staff was confused about who was to be in the study group. The original group of clinicians had some 1:1 education and two sessions as a live ZOOM meeting. The larger group, added later to increase the number in the study group, was presented the criteria in an in-person staff meeting. There was an opportunity in both sessions to ask questions and express concerns. A more direct approach may have proved more effective, with the student investigator previewing the admission roster and making suggestions.

The nursing shortage has made the agency focus on strategies to retain nurses while providing quality care. Leadership must design processes that streamline the admission process, including the readmission risk assessment. Budgets do not allow for an excess of overtime; therefore, there must be a balance between accepting referrals and staff available to provide care.

Future projects include monitoring the readmission rate of those patients who complete the self-risk assessment form. The correlation between the score on the self-risk assessment and the OASIS assessment would shed light on the value of the risk scores. There needs to be a study to determine if it was an increase in self-awareness developed by the assessment that avoided the readmission or something else. That would consist of a qualitative study involving patients' interviews and tabulation of follow-up physician visits and interventions.

Plan for Dissemination

Dissemination of the project results is an essential step of the process. New information must be shared to increase the body of nursing knowledge. The results will be disseminated by presenting the final project and results to the Aspen team with a PowerPoint and oral presentation. The project will also be shared with the hospital research and evidence-based research council to share the information with the health system. The home health performance improvement team needs to be aware of the results and the change in the admission process. The readmission committee of the health system will be interested as the home health agency partners with the plan to decrease readmissions.

A presentation at a university research conference day is in the planning phase. A research day is scheduled for April 2023 as a collaborative venture between the health system and a local university. A call for abstracts will occur in late December. A poster or podium presentation will be developed if the study is accepted.

Sustaining Change

Sustaining change will require buy-in from the staff. Sharing the positive results with the staff will give credibility to the use of the assessment tool. Readmission rates are a component of the bonus available to staff every quarter. Outcomes, including readmission rates of the cases that the clinician managed, are compared to the CMS benchmark for bonus inclusion. Staff is motivated to receive their bonus.

The culture of the agency needs to change. Interventions to decrease readmissions need to become norms of behavior. Shared values amongst the home health staff will shape clinician behaviors that will sustain the changes in the present group and will be passed onto new staff as they assimilate into their position (Sounding Board, 2021).

Recommendations for Future Projects and Practice

There is a need to continue to determine what interventions will be adequate to decrease readmissions. Collaboration with other entities, such as the nurse navigators, could be helpful. Home health cannot practice in a silo. As the patient moves through the continuum of care, they are influenced by many different clinicians in various places. A panel of patients willing to share their ideas on what they need to maintain their health may create avenues not traveled.

Literature reviews on effective patient education would highlight opportunities to improve patient education. Using an iPad for face-to-face check-ins may improve patient engagement and the nurse-patient relationship. Studying caregiver input and how it can influence adherence to the treatment plan is an area to be explored. People deserve individualized care, with collaborative goal-setting and decision-making to provide patient-centered care.

Actual DNP Essentials Met

Implementing the project plan has brought an awareness of many of the DNP Essentials. Essential I, Scientific Underpinnings, was evident during the development of the theory to give the project a sound foundation upon to build. Ajzen's Theory of Planned Behavior became the basis for the study. The theory was able to explain why patients do the things they do.

Organization and Systems Leadership, Essential II, was seen with the collaboration between the home health agency and the main hospital of the health system. The introduction of the project took place at the local home health agency group and the hospital readmission group. A systems approach will affect the community as many entities strive to decrease hospital readmissions by working together. Leadership is integral to making change as leaders assist staff in incorporating different practice routines into their work.

Essential III, Clinical Scholarship and Analytical Methods, was used to generate and analyze outcome reports. Each patient was looked at individually to determine their actual readmission risk and how the self-assessment form could benefit them. A look at the entire group led to valuable results. Determining the mean and median of the study group yielded information on the aggregate characteristics of the people in the study.

The use of technology was an integral part of the project. Essential IV, Information Systems and Technology to promote patient care was the backbone of the information gathering to determine readmissions and their cause. The electronic medical record (EMR) yielded necessary information about the patient and determined if they met the criteria set forth for the study. The EMR also was a tool for communication between clinicians as well as documentation of visit notes. The SHP database produced outcome reports to measure the readmission rates.

Essentials V was evident during the collaborative meetings between the home health agency and the health system's main hospital. Healthcare Policy for Advocacy in health care drove the development of shared goals between the health system and the home health agency where guidelines are shared.

Population health is addressed in Essentials VI and VII. The health of the community starts with a single person. Preventing hospital readmissions and promoting healthy lifestyles that manage chronic disease will lead to a healthier population. The hospital readmission reduction project addressed the needs of the home health agency’s patients. impacting the community at large.

Conclusion

Prevention of hospital readmissions will be an ongoing performance improvement activity across all health systems. As treatments improve, the lifespan of humans will be

extended. Operational processes in place to engage patients in their care will be imperative. Hospital readmissions are considered an adverse outcome. As healthcare reimbursement moves to value-based purchasing, where providers are paid according to patient outcomes, it will be increasingly important to have a high star rating for hospitals and home agencies. The star rating reflects the value of care and is also publicly reported. These ratings influence a patient's choice of providers and where to receive their care. A partnership between healthcare professionals and patients to develop a positive environment will enable them to reorganize their lives and cope with their chronic diseases. There is a sense of urgency to reduce all chronic disease readmissions to improve the quality of life for patients and avoid financial penalties for the health system. The use of the patient's self-risk assessment for rehospitalization may be a tool that motivates the patient to adhere to their plan of treatment. The study will add to the body of nursing knowledge as there needs to be more literature regarding patient self-risk assessments.

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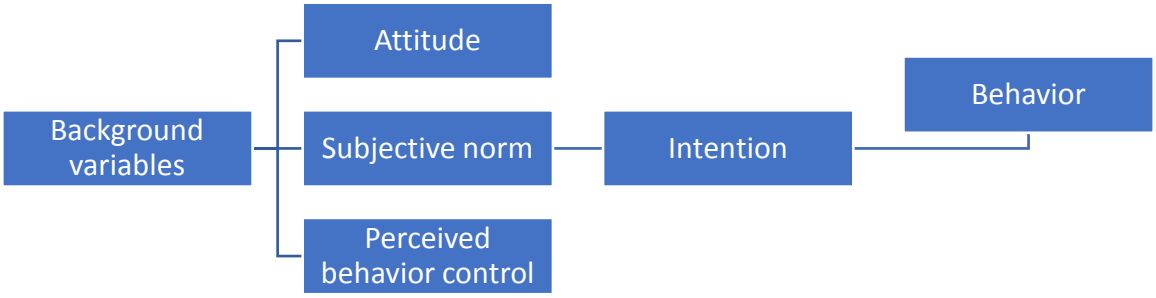
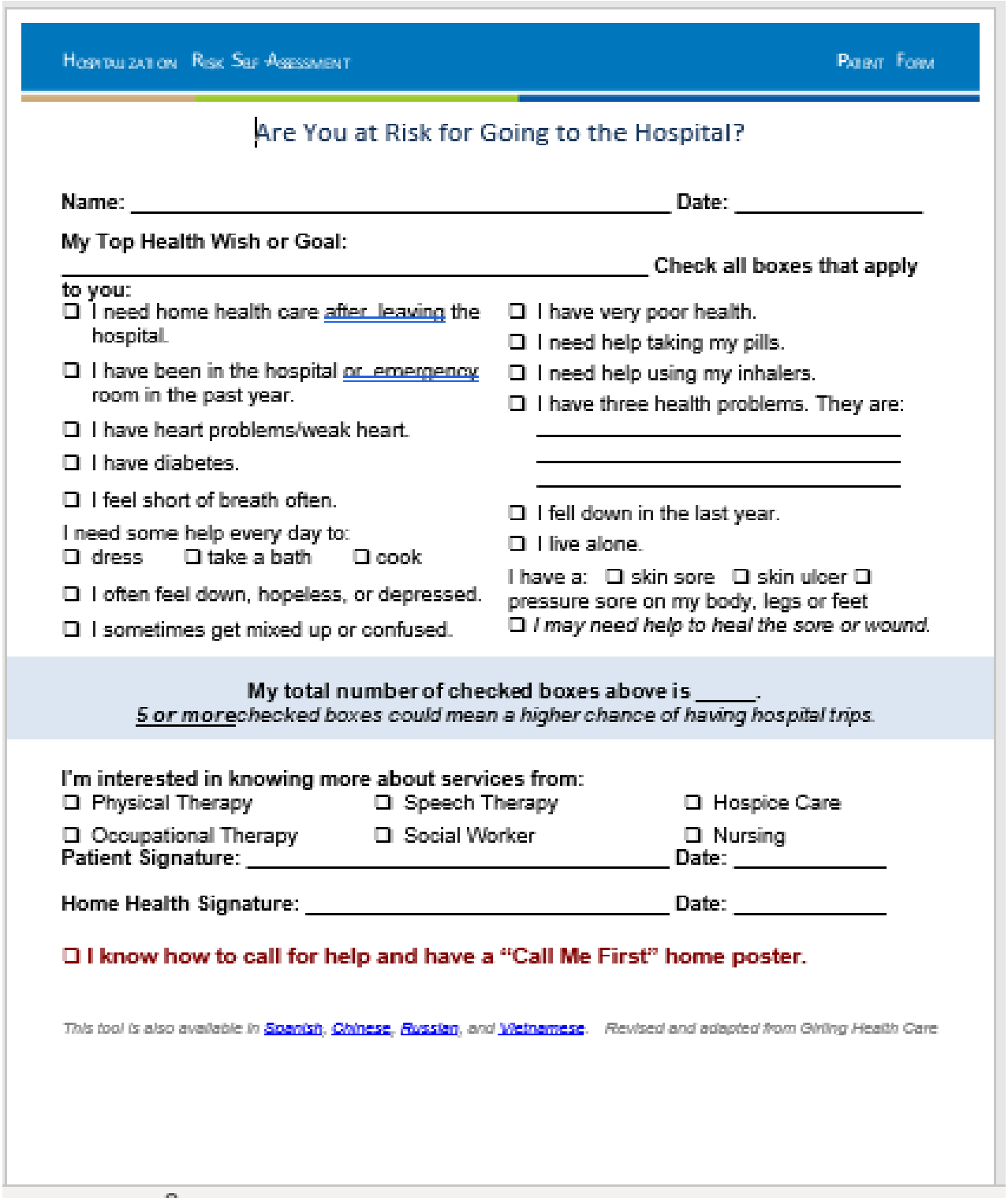
Figures

Figure 1: Theory of Planned Behavior



(Ajzen & Fishbein, 1980)

Appendix A



Hospitalization Risk Self Assessment Patient Form

Are You at Risk for Going to the Hospital?

Name: _____ **Date:** _____

My Top Health Wish or Goal:

_____ **Check all boxes that apply to you:**

- ❑ I need home health care after leaving the hospital.
- ❑ I have been in the hospital or emergency room in the past year.
- ❑ I have heart problems/weak heart.
- ❑ I have diabetes.
- ❑ I feel short of breath often.

I need some help every day to:

❑ dress ❑ take a bath ❑ cook

- ❑ I often feel down, hopeless, or depressed.
- ❑ I sometimes get mixed up or confused.
- ❑ I have very poor health.
- ❑ I need help taking my pills.
- ❑ I need help using my inhalers.
- ❑ I have three health problems. They are:

  _____

  _____

  _____
- ❑ I fell down in the last year.
- ❑ I live alone.

I have a: ❑ skin sore ❑ skin ulcer ❑ pressure sore on my body, legs or feet

❑ *I may need help to heal the sore or wound.*

My total number of checked boxes above is _____.

5 or more checked boxes could mean a higher chance of having hospital trips.

I'm interested in knowing more about services from:

❑ Physical Therapy ❑ Speech Therapy ❑ Hospice Care

❑ Occupational Therapy ❑ Social Worker ❑ Nursing

Patient Signature: _____ **Date:** _____

Home Health Signature: _____ **Date:** _____

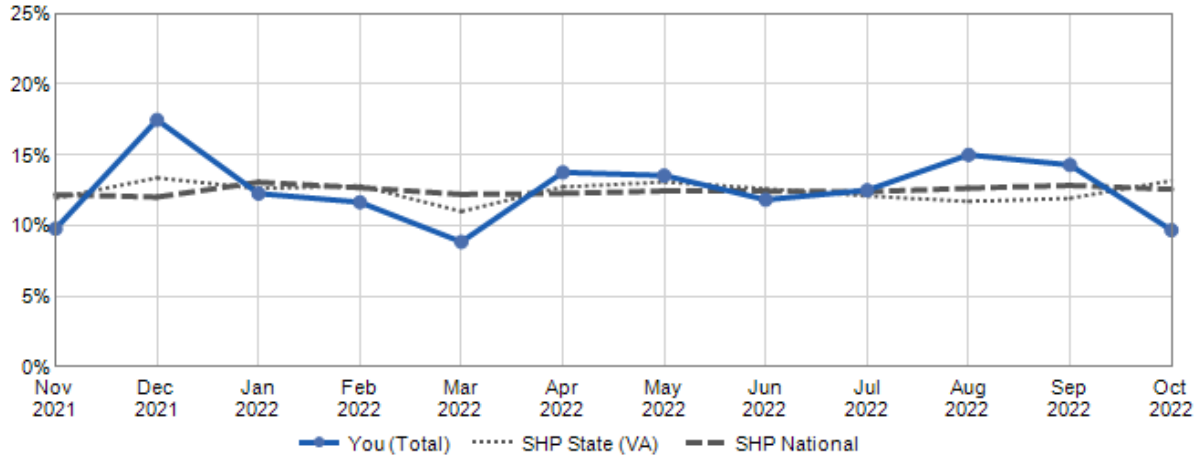
❑ I know how to call for help and have a "Call Me First" home poster.

This tool is also available in Spanish, Chinese, Russian, and Vietnamese. Revised and adapted from Stirling Health Care

Home Health Quality Insights-CMS (2021)

Appendix B

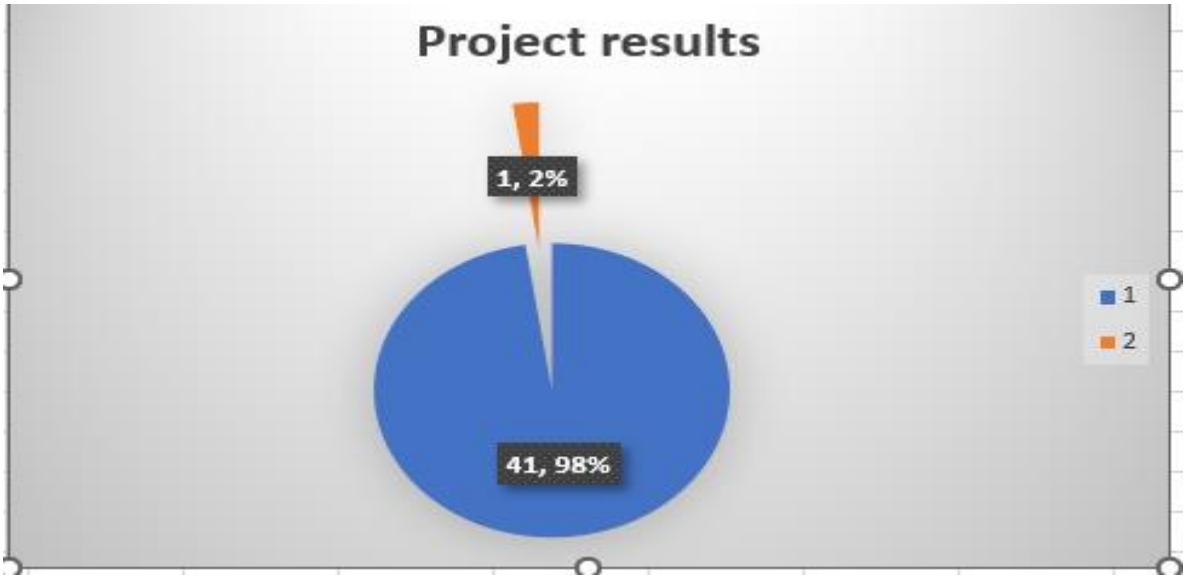
Agency Rate



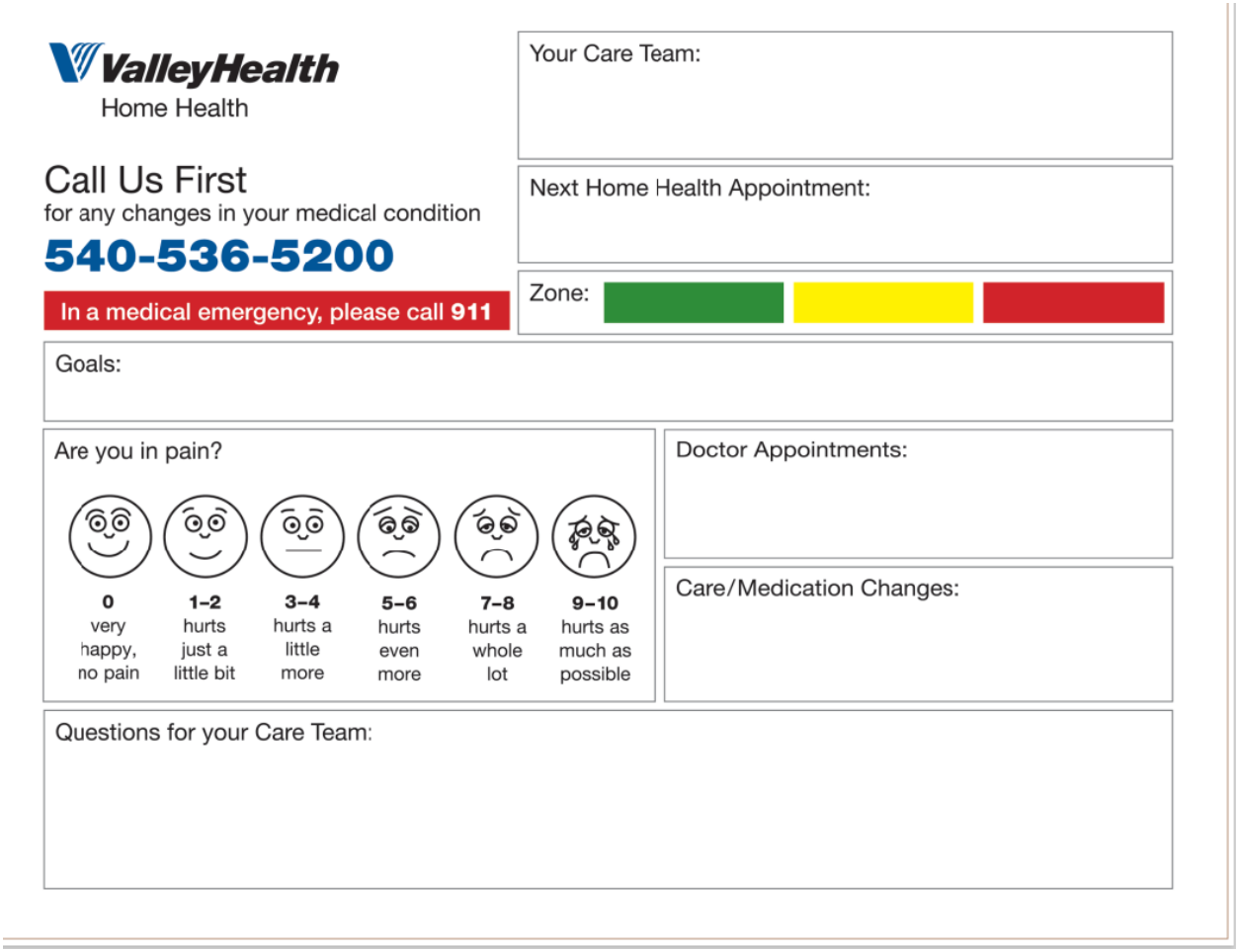
(SHP, 2022)

Appendix C

Project Results



Appendix D



Valley Health Home Health (2020).

Appendix E

Aspen University
4615 E. Elwood Street, Suite 100
Phoenix, AZ 85040
IRB@Aspen.edu

IRB Review Letter

IRB Case Number: JN081122DNP

Today's Date: 08/11/2022
Approval Expires on: 08/11/2023

Name of Principal Investigator: Noel, Joann

Study/Project Title: Patient Self-risk Assessment for Hospital Readmission Reduction

Category:

- ☒ Exempt
- ☐ Expedited
- ☐ Full Review

Action:

- ☒ Approved - The research/project activity may commence.
- ☐ Modifications Required - Review not complete due the following reasons:
- ☐ Disapproved – The application is complete, but the study/project does not meet all the criteria for approval for the following reasons:

As PI of this study/project you understand and agree to:

- Seek approval from the IRB **prior** to **any** changes to the approved protocol using the IRB Change Request Form
- Notify the IRB of any unexpected events or alterations in risk levels for participants immediately and no later than 48 hours of occurrence of such events using the IRB Events Reporting Form
- Request a continuation of approval if the study/project is to exceed the expiration date listed above using the IRB Continuing Review Form
- Notify the IRB of the completion of the study/project using the IRB Close Out Form

Failure to comply with these responsibilities may result in consequences including but not limited to suspension or termination of study/project.

Thank you for your concern regarding the protection of human subjects and best wishes as you begin your study/project implementation.

Signature Heather Frederick Digitally signed by Heather Frederick Date: 2022.08.11 09:10:12 -07'00'

Name Heather Frederick **Title** IRB Chair