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# Reducing 30-Day Heart Failure Readmission Among Elderly Population in Long-term Care

Nkechi Ukomadu

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Reducing 30-Day Heart Failure Readmission Among Elderly Population in Long-term Care

Nkechi Ukomadu

University of Massachusetts, Amherst,

College of Nursing

DNP Project Chair:        Pamela Aselton PhD

DNP Project Mentor:      Khoa D. Nguyen, MD

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**Table of Contents**

**Abstract**

*Background***:** Heart failure is the leading cause of hospitalization in the United States and accounts for more than one million hospitalizations every year. Readmission within 30 days of discharge is an indicator used for measuring the quality of care for heart failure patient.

*Methods:* The goal of this quality improvement project is to reduce the 30-day readmission rate of heart failure patients 60 years and older in a long-term care setting in Texas by using an evidence-based transitional readiness discharge checklist for heart failure. Interventions included staff education on the key components and on the checklist. A pre- and post-test was given to measure staff learning, and the 30-day readmission rate of patients was provided by the long-term care facility electronic health record.

*Results:* The project followed 18 patients with heart failure and other comorbidities admitted between October 2018 and March 2019. None of the 18 patients were readmitted to the hospital within 30 days for heart failure exacerbation, although two were readmitted for other reasons. The patients continued to be treated in long term care, which reduced the readmission rate from a previous high rate of readmission to the hospital from this facility of 45% to 13%. Staff reported an increased knowledge of heart failure on pre and posttests. Ten licensed staff had pre-test mean score was 82.78, with a post-test score increased to 98.57 indicating greater knowledge of heart failure.

*Conclusion:* Staff education on discharge readiness checklist of heart failure older adult patients may increase the knowledge of the staff resulting in better care of heart failure patients on

discharge from acute care facilities and reductions in the 30-day readmission rate as seen in the heart failure patients at this Texas long term care facility.

*Keywords: Heart failure (HF), transitional care, 30-day readmission rate, long term-care.*

## Introduction

According to the Agency for Healthcare Research and Quality (2013), heart failure is the leading cause of hospital readmission. Many patients admitted for heart failure (approximately 25%) are readmitted within 30 days and often within 15 days of discharge from a healthcare facility. This is particularly true for patients with comorbidity of diabetes and hypertension.

Heart failure readmission is a significant marker of morbidity and mortality that should indicate to both inpatient and outpatient medical providers the severity of illness and importance of close evaluation and management of the disease process (Ziaeian and Fonarow, 2016). The elderly population with multiple readmissions in long-term care facilities has a high rate of developing preventable complications. The overall national rate for those who are readmitted within 30 days shows that that 61% of patients are readmitted within 15 days of being discharged from the hospital, while the remaining 39% are readmitted in 16 to 30 days (Van Booven, 2013). It is imperative that nurses are educated about interventions to improve the health of heart failure patients in order to decrease morbidity and mortality as well as to improve the health of older patients who have experienced heart failure.

## Background and Significance

Heart failure is a complex clinical syndrome characterized by the reduced ability of the heart to pump which causes inadequacy of cardiac output to meet metabolic demand (Savarese and Lund, 2017). Approximately 5.7 million American adults are living with heart failure and, it

has been estimated that the prevalence of heart failure will increase 46% between 2012 and 2030 with more than 8 million adults living with the chronic condition in the U.S. (Ziaeian & Fonarow, 2016). According to Almkuist (2017), one in four patients discharged with heart failure are readmitted within 30 days. Heart failure readmission in Medicare recipients costs more than $33 billion according to the Center for Medicare and Medicaid (CMS).  Healthcare systems are working to find ways to improve the physical and financial outcomes of heart failure patients.

The 30-day hospital readmission rate is used to measure the quality of care for patients with heart failure because it can be a marker of poor healthcare quality and efficiency in healthcare delivery system (Dharmarajan, Hsieh, Lin, Bueno, Ross, Horwitz, Barreto-Filho, and Krumholz, 2013). In response to the high rate of 30-day readmission among heart failure patients in the United States, the Center for Medicare and Medicaid (CMS) created the Hospital Readmission Reduction Program (HRRP), which penalizes healthcare facilities with a high rate of 30-day hospital readmissions (AHRQ, 2014). These healthcare facilities have been penalized a percentage of their total CMS reimbursement, and incentives are provided to improve quality of care by reducing preventable readmission (Kripalani, Theobald, Anctil, & Vasilievskis, 2015).

The prevalence of heart failure among the elderly living in long-term care facilities is approximately 20% leading to increased morbidity and mortality in that population (Foebel, et.al., 2013).  Thus the CMS monetary penalty equally impacts healthcare institutions like long-term care facilities. As a result, there is increased awareness of the 30-day readmission problem, particularly in long-term care facilities which have begun to aggressively implement strategies to reduce preventable readmissions among elderly patients with heart failure. Long term-care facilities have a vested interest in participating in the national initiative to reduce the 30-day heart failure readmission rate.

**Problem Statement**

The mortality rate of patients with heart failure is over 50% and many of those patients die within five years of diagnosis (AHRQ, 2013). Approximately 30% of those are Medicare beneficiaries and the death occurs within one year of diagnosis due to age and multiple comorbidities. Improvements in quality of care for these patients and reduction in the 30-day readmission rate can be accomplished by implementing appropriate evidence-based interventions such as the discharge readiness checklist for heart failure (American College of Cardiology, 2012; Giscombe, 2017).

Kripalani et al. (2015) argue that the cause of 30-day hospital readmission among patients with heart failure is a lack of intervention between pre-discharge, post-discharge and bridging intervention. Therefore, the types of interventions to reduce 30-day readmission among the older adults include patient/caregivers' education, discharge planning, follow-up telephone calls, patient-centered discharge instructions, and discharge coaches or nurses who interact with the patient before and after discharge. Older adults are prone to a higher rate of morbidity and mortality from heart failure, especially when discharged from the hospital or healthcare institution without appropriate discharge planning and education (Kripalani et al. 2015).

The purpose of this project was to reduce the 30-day readmission rate of heart failure patients 60 years and older by implementing a discharge readiness checklist for heart failure patients. The focus was on the assessment of discharge needs and increased coordination of the patient's transition to home by a multidisciplinary team as the checklist was being completed. This quality improvement project was implemented in a long-term care facility in Texas.

**Organizational "Gap" Analysis of Project Site**

This project was carried out in a long-term care setting in Houston's metropolitan area. The long-term care setting treats many patients 60 years and older who have heart failure and have been recently discharged from the hospital. This facility's patients experienced up to a rate of 45% hospital readmission. Due to the high rate of 30-day readmission, the long-term care facility's medical director, administrators, and staff were enthusiastic to embark on a project that had the potential to reduce the rate of hospital readmission while simultaneously improving overall customer satisfaction and monetary reimbursement. The DNP student served as the mentor, educator, and facilitator of this project and strove to remove any barriers that impeded the progress of the project.

## Review of Literature

A search of relevant articles published in English from 2013 to 2018 was performed with the keywords "*heart failure readmission*", "*congestive heart failure readmission*", "*long-term care*", "*skilled nursing facility*", "*30-day readmission*", and "*transitional care*" on the following databases: Cochrane Library, Cumulative Index to Nursing and Allied Health Literature (CINAHL), National Quality Literature (NQL), Agency for Healthcare Research & Quality (AHRQ), National Guidelines Clearing House, Ovoid, American Heart Association (AHA), Umass Amherst libraries, PubMed, and Google. The Medical Subject Head (MeSH) was also used for the diagnosis of heart failure.

The initial search resulted in more than 200 articles of which 50 were selected based on the content regarding 30-day readmission of heart failure of the elderly. This was further narrowed down for the purpose of this project to 25 articles that focused on the causes of readmission and the prevention of readmission with evidence-based clinical guidelines. The criteria for exclusion were as follows: studies with patients under 18 to 59 years of age,

readmission 30 days after hospital discharge, case reports and editorials The focus was on studies of patients 60 years and older living in a long-term care facility or skilled nursing facility with readmission status of 30 days or less. The Johns-Hopkins Nursing Evidence-Based Practice Research Evidence Appraisal Tool was then used to appraise and rate the strength and quality of the articles: twelve articles closely related to the project were selected.

Vedel and Khanassov (2015) conducted a systematic review and meta-analysis of the randomized controlled trials on the effect of transitional care on patients with congestive heart failure, and 41 randomized controlled trials were identified. The High-Intensity Transitional Care Intervention combined home visits, follow-up telephone calls, and clinic visits 7 days after hospital discharge to reduce 30-day hospital readmissions for patients. The Downs and Black scale were used as a tool to validate the experimental studies while a sensitivity result was conducted to assess the robustness of the intervention.  Older patients with congestive heart failure who intensely followed up with their primary care physician within a week of discharge had a better outcome, reduction of 29% in emergency department visits and 30-day readmission rate than the patients who did not receive transitional care interventions. This systematic review concluded that the act of scheduling discharged patients for primary care follow-up visit within 7 days of hospital discharge is a simple way of reducing readmission rate and emergency department visits.

Toles, Colon-Emeric, Asafu-Adjei, Moreton, and Hensen (2016) conducted a meta-analysis on the effect of transitional care of older adults in skilled nursing facilities. This meta-analysis review used a combination of pre-discharge, post-discharge, and bridging transitional care. Skilled nursing facility nurses planned discharges, provided patient-centered instructions to bridge care from the facility to the patient's home, and made follow-up phone calls and home

visits after discharge. Patient outcomes were poor in the 90 days of the transition from the skilled nursing facility to home following discharge with approximately 20% of the subjects visiting the emergency department without hospitalization, 30% readmitted, and 8% dying and there was limited evidence that transitional care improved clinical outcomes (Toles et.al. 2016).

Long, Babbittand and Cohn (2017) completed a systematic review on the impact of home telemonitoring for early signs and symptoms of heart failure exacerbation after discharge home. The authors reviewed six studies. Out of the six studies between 2011 and 2016, four featured giving the patients specific equipment such as a heart monitor to facilitate the collection of research data. This review concludes that given the high prevalence of heart failure and the penalties associated with high readmission rates, it is crucial to understand factors that may reduce readmission risk and develop strategies that reduce readmission among high-risk groups (such as readiness discharge checklist for heart failure). Four of the studies showed a small (1-2%) reduction in 30-day readmission rates between the control and test group (Long et. al., 2017).

Feltner et.al. (2017) conducted a systematic review and meta-analysis on 30-day readmission of the elderly with moderate to severe heart failure from 2007 to 2013. Each of the articles reviewed by Feltner et al featured interventions that included one or more of the following components: the education of patients by nurses before and after discharge planning or scheduled outpatient clinic or home visits, telemonitoring, structured telephone support, transitional coaching or case management, and interventions to increase provider continuity. This review concluded that studies showed that the combination of more than one intervention reduced the 30-day readmission rate over a period of three to six months.

Maliakkal (2014) conducted a cross-sectional study of 68 patients age 65 years and older with congestive heart failure in southern Chicago. The study analyzed the impact of the home health intervention on hospital readmission. The intervention consisted of full medical home surveillance which included vital signs monitoring, assessments, medication management, and patient education.  According to the researcher, there was a mean decrease of 2% in the readmission rate each month. The primary limitation of this study was that results were collected via self-reporting.

 A systematic review conducted by Ziaeian et al studied interventions such as patient education, discharge planning, medication reconciliation, scheduling follow-up before discharge, communication with outpatient providers, and follow-up calls implemented to reduce readmission. The review concluded that no single intervention alone was associated with lower 30-day readmission risk (Ziaeian et.al, 2016).

According to Kripalani et. al. (2014), who conducted randomized controlled trial studies of 43 heart failure patients, findings revealed a reduction in 30-day readmission of heart failure patients using a combination of interventions.  Multiple interventions such as patient education, discharge planning, medication reconciliation, an appointment scheduled with the primary care provider prior to discharge, timely follow-up with the primary care provider, timely primary care communication, follow-up telephone calls, patient hotline availability, and home visits proved to be successful in the reduction of 30-day readmission rate (Kripalani et.al., 2014)

A meta-analysis of 26 randomized controlled trials involving 7,932 subjects found 30-day readmissions were reduced only by high-intensity transitional care programs that included home visits within three days of hospital discharge, care coordination by an APRN or RN, and successful communication between the hospital team and primary care provider within one week

of discharge (Nelson & Pulley, 2015).  Another systematic review and meta-analysis of 42 randomized trials found that tested interventions that were complex, multifaceted and supported patients' capacity for self-care prevented early readmission (Alper, O'Malley & Greenwald, 2018).

One systematic review found that only five of the 16 randomized trials demonstrated significant decreases in readmission rates, and four of the five successful studies involved several simultaneous interventions, including patient-centered discharge instructions and a post-discharge telephone call (Alper, et.al. 2017).  Many types of interventions including medication reconciliation, structured electronic discharge summaries, discharge planning, and facilitated communication between the hospital and community providers impacted favorable outcomes including reduced readmission rates (Alper et al., 2017).

A cohort study of Geriatric Outcomes and Longitudinal Decline in Heart Failure (GOLD-HF) by Foebel, Heckman, Dubin, Turpie, Hussack & Mckelvie (2013) followed 546 newly admitted residents to 42 long term-care facilities for one year to establish predictors of mortality and hospitalization rates for the patients with and without heart failure. The study lasted from February 2004 to November 2006, and heart failure diagnosis was determined by the research nurse after assessment of the residents. The purpose was to determine if there is any statistically significant difference between the hospitalization rate of those patients with heart and those without. Foebel et al. (2013) established that 21.4% of the sample had heart failure. The result of the study on the long-term care facility residents revealed that there is an association between heart failure and high mortality (24%) and hospitalization rate (27%).

According to the Agency for Healthcare Research and Quality (2015), more than one in five Medicare patients discharged from the hospital is readmitted within 30 days of hospital

discharge at an annual cost of $15 billion. Up to three-quarters of these readmissions are preventable through patient education, coordination of community-based services, and monitoring of high-risk patients. Morbidity and mortality resulting from 30-day hospital readmission of the elderly population can decrease the heart failure patient's quality of life.

The articles reviewed here, although mixed in findings, reveal evidence that 30-day readmission of patients 65 years and older with heart failure continues to indicate problems with the older adult heart failure patient's quality of care. Appropriate transitional care to home can reduce the 30-day readmission rate and result in better health outcomes for the older adult with heart failure. The transitional care that includes staff/caregivers' education, medication reconciliation, follow-up care within seven days of hospital discharge with a primary care provider and heart specialists have been associated with a reduction in 30-day HF readmission.

The discharge planning process from a hospital to a skilled nursing or rehabilitation facility has been acknowledged by researchers to reduce 30-day HF readmission (Franks,2015; Mathew, 2017). A multifaceted intervention study at skilled nursing facility (SNF), that included education and collaboration of Nursing staff, Advanced nurse practitioner, Pharm D, Physician, aides by (Callihan, Murali, Neal, Spellman-Kyluck and Hadi, 2018), reduced 30-day HF readmission from 10.7% to 3.7%. According to Callihan, et al., (2018), multifaceted multidisciplinary intervention including education and monitoring may provide quality continuity of care during the continuum of care from hospital to SNF/LTC or home thereby reducing 30-day HF readmission.

### Evidence-Based Intervention: Verification of Chosen Option

This DNP project utilized a discharge readiness checklist for heart failure patients designed by the DNP student according to the Heart Failure Society of America (HFSA)

guideline (See Appendix A). The project was structured so that the checklist process would start at the time of admission on all patients 60 and older admitted with heart failure from October 2018 to March 2019. The unit managers disseminated the information to the admitting nurses who started the process upon admission, identifying and track older adult patients at high risk for 30-day heart failure readmission.

All the components of the checklist were checked off by the nurses prior to discharge and reviewed with the unit manager and by the DNP student for verification. The checklist tracked the completion of the transitional care process to ensure a patient's readiness for discharge. According to The Joint Commission (2015), the combined evidence-based interventions and customized method to reduce readmission consist of intensive pre-discharge patient education and a post-discharge follow-up call to review medications as well as a prompt follow-up visit with a primary care physician.

The Heart Failure Society of America (HFSA) readiness discharge checklist for heart failure contains components that allow patients and caregivers to receive education on self-care management from admission to discharge and a follow-up after discharge to reduce 30-day readmissions (Frederick, Wai, Ly, Olson, Van Skike, Boer, Wiseman, Edward, Fall and Mowreader, 2016)

The HFSA contends that many patients discharged with heart failure are not, in fact, ready for discharge. The discharge readiness checklist not only ensured HFSA guidelines, but it also considered the brain natriuretic peptide (BNP) level of the patient, code status discussion, and evidence-based care transition guidelines created by the Society of Hospital Medicine (SHM).  According to Fedrick, Woi, Edward, Van Spike, and Hopler (2014), heart failure readmission was reduced by 3.5% while the 30-day readmission ratio was reduced from 1.2 to

0.8 with the implementation of the discharge readiness checklist. They found that use of heart failure discharge readiness checklists is strongly associated with a reduction in heart failure readmission (Fedrick et al., 2014).

Patient engagement and participation in care is a vital aspect of patient-centered care including shared decision-making between healthcare professionals and patients (Chaboyer, McMurray, Marshall Gillepie and Hutchinson, 2015). Patients who participated in planning their transition to home had a reduced hospital readmission rate compared to those who were less involved in decision-making (Chaboyer et. al., 2016).

Sentinel events collected by the Joint Commission (2015) indicate that the root cause of 30-day readmission of elderly patients with heart failure is the lack of patient and family engagement in healthcare decision-making, lack of patient education, and failure in communication between patients and care providers. The readiness discharge checklist for heart failure patients obliges medical staff to educate patients and family members on measures to prevent heart failure to prevent 30-day readmission.

### Theoretical Framework

Psychologist Kurt Lewin (1951) developed change theories that many organizations use to adopt and monitor the change process. Lewin's research in field theory and group dynamics guided him to assert the three-step model of change (Lewing, 1947; Batras, Duff, & Smith, 2014) which is utilized to guide the design and implementation of this project. This project utilized an evidence-based transitional discharge checklist and the DNP student worked with the group of staff to help them understand their behaviors and adjust them accordingly in order to assist them in adopting the checklist as protocol.

Batras et, al. (2014) report that Lewin's study on group dynamics is based on the premise that individuals are persuaded by group norms and feel pressure to conform to these norms. The group norm creates resistance to change. Thus, Lewin states that instead of changing individuals, group behavior and decision-making must shift for a change to be sustained (1947). The staff and the stakeholders in this DNP project were enthusiastic to find a solution to the high rate of readmission at their facility, which primed them to readily accept the change

According to Lewin (1947), all subjects must be examined in order to bring about a sustainable change. The theoretical framework for this project was changing the mindset of the long-term care facility staff from the way transitional care has always been practiced. The DNP student introduced a new evidence-based discharge process that involved a discharge readiness checklist for heart failure. The checklist provided an effective mechanism and ensured that discharge communication reliably contained all key elements that would prevent readmission.

Lewin's theory of change starts with "unfreezing" or overcoming the existing mindset; "moving" or allowing for a period of transition to create change; and "freezing" or creating a new mindset that is successful and stable as illustrated in Appendix B (Cummings, Bridgman, & Brown, 2016). The unfreezing stage for the implementation of the project included education of the key stakeholders to understand the benefits of the project and the process of the implementation and the staff being educated on the discharge readiness checklist for heart failure. The unfreezing stage enabled the staff to cease old, often unsafe practices of discharging patients. The purpose of the unfreezing phase was to interrupt previous thoughts, mindsets or knowledge of previous practice behaviors and to prepare the staff to accustom themselves to the new process of completing the readiness discharge checklist on appropriately selected patients.

The "moving" or transitional stage in Lewin's theory included the actual implementation of the process, which involved actual adjustment of the previous practice behaviors and knowledge while the project progressed. As in Lewin's theory, this stage was also used to identify resistance to discharge changes. The project director facilitated and encouraged the staff with information on the benefits of the discharge checklist to their employment stability and the organization. The readiness discharge checklist could prevent the patients from being readmitted to the hospital, maintain high census in the facility, prevent the cancellation and improve both the financial income of the staff and the facility.

The "refreezing" stage occurs when the staff in the organization accepts the change and the practice becomes a new group norm. Lewin believed that an individual's decision to make a change and commit to the group ethos aids in sustainability (Batras, Duff, & Smith, 2014; Lewin, 1947; Mitchell, 2013,). During the refreezing stage, a continuous re-evaluation of the stability and progress of the DNP project was instituted to make sure that the change was sustained.

**Project Design**

An effective management model is Edward Deming's Plan-Do-Study-Act cycle method (PDSA) and was utilized in the implementation of this quality improvement project. According to Donelly and Kirk (2015), it is often used to help the team improve quality of care, which makes healthcare safer, more efficient, more patient-centered and more timely, effective, and equitable. The PDSA cycle method was implemented as follows:

**Plan:** The DNP student first met with the stakeholders and discussed the problems of 30-day readmission of patients with heart failure. Stakeholders included the multidisciplinary team from the facility in discussions. There were education sessions to teach everyone involved how the project was to be implemented, the expected timeline, and a cost/benefit analysis explaining why project implementation mattered.

**Do:** The DNP student taught team members on how to complete the discharge readiness checklist for heart failure patients. Once team members were trained, every patient with heart failure was screened for readiness based on the information on the checklist.

**Study:** A pre-test and post-test were used to measure the level of knowledge of the team members on heart failure patients discharge readiness. The facility Information Technology (IT) department provided the 30-day readmission rate on the older adults and monthly rates from the information technology system. The goal was to reduce 30-day readmission from 45% to 20%.

**Act:** There were an ongoing assessment and evaluation of the project to determine its effectiveness by interviewing staff and obtaining the readmission rates from the facility IT personnel on the 30-day readmission rate older adult heart failure patients.

## Methods

The project site was a long-term care facility with 120 beds located in the heart of Houston, Texas. Patients ranged in age from 56 to 108 years of age with a common diagnosis of heart failure. At the start of the project, the rate of facility readmission ranged from 27% to 45%. The data fields were available in the electronic medical record and retrieved by the IT personnel. The unit managers provided information on the newly admitted patients with heart failure and initiated the readiness discharge checklist for heart failure. The patients were monitored closely in reference to the medication regimen, labs, vital signs, and weight during the data collection

process. The data collected was processed with a Microsoft Excel spreadsheet using descriptive statistics and mean of the age group, gender, ethnicity, and diagnosis of the study population.

The DNP student worked with the discharge planners in the long-term care facility to ascertain that follow-up appointments were made for the patients within seven days of discharge and that the patients were discharged with appropriate equipment and medications.  The aim was to educate staff to help reduce the 30-day readmission of older adults with heart failure in a long-term care facility. Key staff such as unit managers and discharge planners participated in the education process prior to the implementation of the project. The overall objective of this project was to reduce the 30-day readmission rate of elderly patients with heart failure by following the guidelines of the checklist.

The discharge checklist screened patients admitted with heart failure for readiness to discharge and listed all the education, services and equipment needed prior to discharge and was presented to the staff and the unit manager for in October 2018. The elements included in the checklist were pre-discharge interventions, patient education, discharge planning, medication reconciliation, and scheduling of a follow-up appointment. Copies of the checklist were placed in a folder in each unit and in the discharge planner's office in October 2018. The checklist was initiated upon heart failure patient admission by the nurse and followed through by the charge nurses during after-hours. The goal was for the patient needs to be identified and attended to before the patient was discharged to prevent 30-day hospital readmission. The PowerPoint presentation (Appendix C) for staff training included information on the heart anatomy and dysfunction of the cardiac system, the background of heart failure, heart failure prevalence, heart failure facts, heart failure interventions, and educational handouts.

Staff knowledge acquisition was evaluated and reinforced through verbal questions and answers during subsequent monthly meetings within the project timeline. There was an increase in nursing knowledge related to the pre and post-test given to the staff in October 2018 (Appendix D). The staff became conscious of weighing patients with HF daily and reported a weight gain of 2lbs. Patients were monitored closely for appropriate intervention. The DNP student was available for clarification of the project process on a weekly basis. The discharge readiness checklist guided the staff to educate the patients, reconcile the medication regimen, and schedule follow-up appointments (Appendix E). The staff nurses initiated the checklist while the unit managers followed-up with newly arrived heart failure patients and determined compliance. Due to the low number of samples, data were collected from patients from the age of 60 to 94 years.

The DNP student reviewed the checklists for proper documentation and followed-up when discrepancies were noted, collaborating with unit managers and the discharge planner in order to evaluate the process. The discharge checklists completed during the project timeline were collected and reviewed by the DNP student for accuracy. Patients with heart failure who were readmitted to the hospital for any other diagnosis were excluded. The discharge planner arranged for home care services and medical equipment prior to discharge and worked toward an effective hand-off process during the transition from long-term care to home.  The results of the project were shared the last week of February with the stakeholders and team members for future reference. The data collected (Appendix F) from October 2018 to March 2019 was entered into a Microsoft Excel spreadsheet in the computer with password protection.

**Ethical Consideration/Protect of Human Subjects**

The project was examined by the University of Massachusetts, Amherst Internal Review Board (IRB) and approved.  The project team members followed the policy and procedure of the facility pertaining to HIPAA rules and regulations. The patient's health information was secured from public exposure by encryption and users were assigned a password to the electronic health record.  Electronic data was stored in a password-protected document on a password-protected computer in a secure location. The data collection process occurred on a monthly basis starting in January 2018 to track the 30-day readmission before and after the implementation of the QI project. The data collected during the project timeline is only being used internally for quality improvement. Thus, the facility did not require IRB approval for Quality Improvement projects (Appendix I.).

## Results

The goal was to collect data on all older adults from ages from 60years old with heart failure who were admitted to the long-term facility from October 2018 to March 2019. During that time, the DNP student educated the staff and implemented a discharge readiness checklist on all heart failure patients in order to prevent 30-day readmission. The project included 18 patients with heart failure and other comorbidities admitted in the facility between the periods of October 2018 to January 2019. Due to the age limit of the project, two patients were who 57 were and 59 years were excluded.

The demographics of heart failure admissions during the time of the project implementation and monitoring is presented below in Table 1.

**Table 1. Heart Failure Admission Demographics October - March**

| Age Ranges | 60-64 | 4 | 25% |
|---|---|---|---|
| | 65-69 | 4 | 25% |
| Gender | Male | 12 | 75% |
| | Female | 4 | 25% |
| Ethnicity | Hispanic | 3 | 18% |
| | Caucasian | 1 | 6% |
| | African American | 12 | 75% |

The demographic data depicts the age, ethnicity, and gender.  According to the data collected, it appears that the prevalence of HF patients is within the ages of 60 to 74 years. While more males had HF than female the prevalence of HF is high among African American.

The ages of the sample group ranged from 60 to 94 years (mean 68.56) (SD=20.04). So ($n=16$) patients were used for analysis in the project. Among the patients included, ($n=5$) were females while patients ($n=11$) patients were males. Furthermore, the ethnic group of the samples was Hispanics ($n=3$), Caucasians ($n=1$), and African Americans ($n=12$). All the patients had a comorbidity of hypertension (HTN) while ($n=8$) patients had both HTN and Diabetes Mellitus (DM2). The location of the project site contributed to the high number of African American patients. The project site is in a predominantly low-income black

A monthly discharge list of patients from the facility was retrieved from the facility's healthcare database by IT personnel so the DNP student could identify the elderly patients with heart failure that were readmitted within 30 days of hospital discharge. This data was collected from the IT staff who printed out the current rate of 30-day heart failure readmissions for the

DNP student.  The facility launched its electronic health record (EHR) in January 2018 so, there

were no 30-day readmission data in the EHR for 2017.

**Table 2. 30-Day Readmission rates for Older Adults Long-Term care facility**

| Date (Month/Year) | Readmission Rate |
|:---:|:---:|
| Jan-18 | 20% |
| Feb-18 | 0% |
| Mar-18 | 36% |
| Apr-18 | 37% |
| May-18 | 45% |
| Jun-18 | 39% |
| Jul-18 | 41% |
| Aug-18 | 14% |
| Sep-18 | 0% |
| Oct-18 | 9% |
| Nov-18 | 0% |
| Dec-18 | 0% |
| Jan-19 | 0% |
| Feb-19 | 13% |
| March-18 | 0% |

Data were collected on the reason for 30-day readmissions and the results were compared

with the readmission rate prior to October 2018 and the implementation of the QI project.

Strategies were implemented to prevent misrepresentation of the data collected.  The Microsoft

Excel spreadsheet was used to generate descriptive statistics to help identify and quantify the

patient populations tracked and readmission from October 2018 to March 2019.

Descriptive data was analyzed using Excel including patient demographics, readmission

rate and pre-post- test.  The data on all-cause 30-day readmission was retrieved from the facility

EHR as the software does not have the interface to categorize the readmissions under different

diagnosis. The data from the pre- and post-test on heart failure and its management determined

the level of knowledge of the staff before and after the test is presented below in Table 3.

**Table 3**. **Pre and Post-test Results of Staff Knowledge of Heart Failure**

| Employee | Pre-test (Percent) | Post-test (Percent) | Difference (Post-Pre) |
|---|---|---|---|
| 1 | 85.7 | 100 | 14.3 |
| 2 | 71.4 | 100 | 28.6 |
| 3 | 85.7 | 100 | 14.3 |
| 4 | 85.7 | 100 | 14.3 |
| 5 | 71.4 | 100 | 28.6 |
| 6 | 85.7 | 100 | 14.3 |
| 7 | 71.4 | 85.7 | 14.3 |
| 8 | 85.7 | 100 | 14.3 |
| 9 | 100 | 100 | 0 |
| 10 | 85.7 | 100 | 14.3 |

There was an increase in knowledge of 30-day heart failure readmission prevention as

evidenced by the test results. The table above shows the results of the education program for the

prevention of 30-day heart failure readmission. A paired t-test analysis of the data yielded a p

value of 0.00017 indicating a significant change in knowledge.

Readmission within 30 days of hospital discharge among the sample age-specific data

was made available from the electronic healthcare record system by the IT personnel on a

monthly basis. Two patients out of the sample population were readmitted within 30 days of

hospital discharge. The reasons for the readmission were related to complications other than

heart failure. The first patient had comorbidity of DM2 and end-stage renal disease as well as

being on dialysis three times a week. The readmission occurred related to hypotension during

dialysis, so he was transferred to the hospital from dialysis. The second patient was readmitted to

the hospital due to leukopenia and anemia as a result of history leukemia for blood transfusion

and monitoring.  The remaining patients were placed permanently on a non-skilled bed at the long-term care facility and were provided with care by the licensed and non-licensed staff.

**Figure 4. 30-Day HF readmission Rate in a Long-Term Facility**
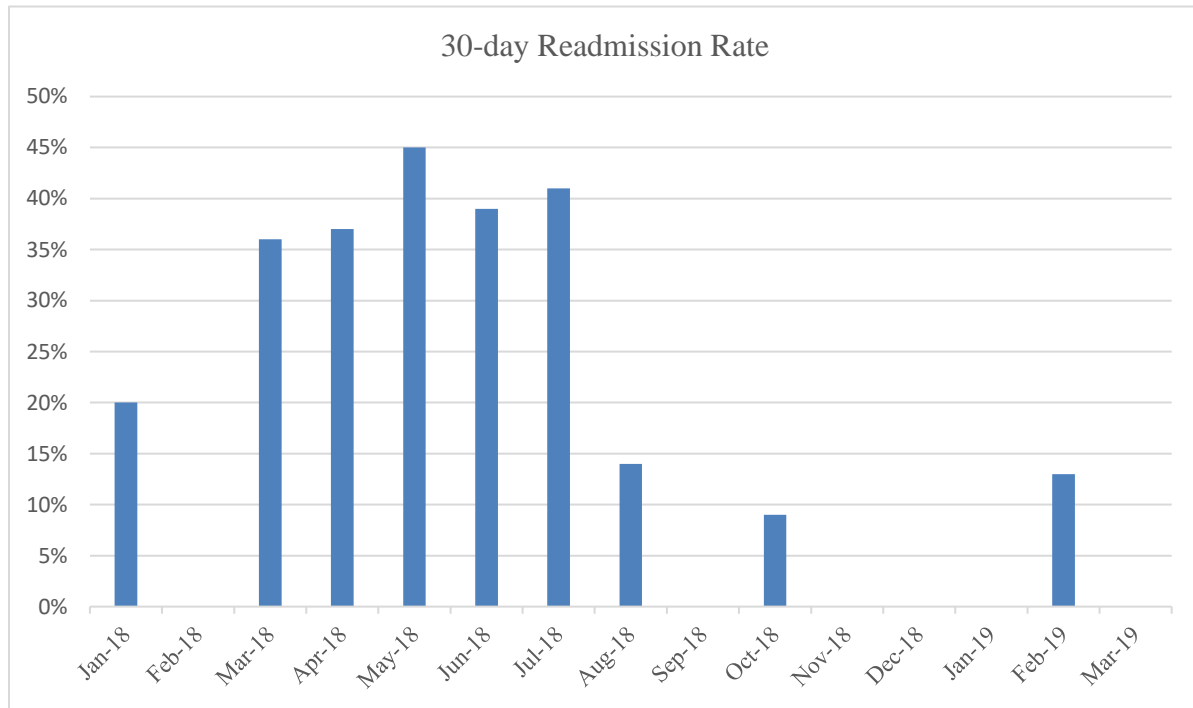


The pre and post-test including PowerPoint presentation and education of the staff on implementation on heart failure discharge readiness checklist appeared to increase the knowledge of the staff nurses as evidenced in the reduction rate of 30-day heart failure readmission. From the month of October 2018 to January 2019, the DNP student tracked (n=2) 30-day heart failures readmission out of (n=14) patients admitted to the facility (*SD*=12.5%). The non-readmitted patients remained in the facility as residents. Also, there were no 30-day all-cause readmissions in November, December and January, February and March, consequently, no 30-day readmission of heart failure patients occurred during this time frame. Out of a total number of (n=8) admissions in the month of February only (n=1), 30-day readmission occurred related to acute respiratory distress. When compared with the highest readmission rate of 45%

that occurred at the facility in May 2018, the rate of readmission during and after the

implementation of QI project was clearly positively impacted. The QI project appears to have

reduced the rate of 30-day readmission of elderly patients with heart failure to 13% in March

2019.

The nursing staff monitored patients' weight, vital signs, and medication regimen closely.

This, along with patient and family education, appear to have positively affected the outcomes

for these patients. There was a reduction in readmission which is shown when the initial 30-day

readmission rate is compared with the rate of readmission during the QI project as indicated in

Table 4. The nurses have fully adopted the heart failure readiness discharge checklist and family

and patient education prior to the admission process. Although it took time to implement and

monitor the checklist, the benefit outweighed the cost.  The DNP student, however, could not

compare this internal benchmark with any external benchmarks due to the small size of the

sample for this project.

The patient in skilled care with a history of leukemia was re-admitted before 30-days of

discharge from the hospital for non-HF complications. The DNP student manually tracked the

patients discharged to non-skilled beds as a resident of the long-term care facility. Fourteen

patients remained in the long-term care after 30-days of admission and were provided care by

licensed and unlicensed staff. It was assumed that the reason for the high number of older adults

with heart failure that remained in the facility was that the staff received education on 30-day

heart failure readmission prevention strategies and implemented these strategies while caring for

the patients involved in the project.

As a mentor, educator, and facilitator, the DNP student consistently worked with the

stakeholders and staff and implemented strategies that decreased the rate of heart failure 30-day

readmission among the elderly in long-term care. This project shows that appropriate transitional care reduces heart failure 30-day readmission among the older adults in long-term care, at least on a small scale.   The Lewin theory stage of unfreezing gained its momentum whereby the staff continued the implementation of the knowledge acquired and the toolkit to assess the readiness of patients with heart failure before discharge.

**Discussion**

Multiple interventions, including staff education with a PowerPoint presentation, pre- and post-test to increase the knowledge of the staff on heart failure management appears to have reduced the 30-day readmission of elderly heart failure patients and improved the quality of care for heart failure patients in this long term care facility. The DNP student observed the staff attitudes toward the change during the "moving" stage, and their willingness to complete the readiness discharge HF checklist. Initially staff thought the checklist was cumbersome until they saw an improvement in the readmission rate.

The prevalence of hypertension is high among African Americans due to poor control and consequently have more target-organ damage (Sharma et.al., 2019). In fact, in many hypertensive African Americans who develop HF, the hypertension is poorly controlled and it predisposes them to increase risk of 30-day HF readmission with morbidity and mortality rate. The location of the project site may have contributed to the high number of African American patient since the project site is located in a predominantly low-income black neighborhood. It may also be related to a high prevalence of hypertension and heart disease among the African American race. According to Diaz-Villanueva & Alfonso (2016), most patients with HF are elderly, constituting up to 80% of patients from this disease with both incidence and prevalence of the condition increases with age and the "elderly" status which have shifted to 70-80 years.

The goal of the project was to reduce the readmission rate in persons aged 60 and older to 20%. Data collected by the Center for Medicare and Medicaid on 30-day readmission of elderly patients within long-term care facilities, as well as internal benchmarking were used to measure the success of the project. External benchmarking enables understanding of where the organization falls within the national 30-day heart failure readmission rate while motivating them to perform better nationally (AHRQ, 2013). The US national benchmark for 30-day HR readmission between 2013 and 2016 was 21.6% (Partner Healthcare Quality & safety, 2016). When compared with the facility post intervention rate of 13%, there is evidence that the readiness discharge checklist implemented in the facility reduced the readmission rate below US national rate. Education seemed to have made a difference in this facilty.

The patients with comorbidity are at high risk for 30-day HF readmission when discharged to SNF/LTC or home. Good hands off care from inpatient discharge planning to SNF/LTC or home is necessary for the continuum of care to prevent 30-day HF readmission. According to Goldgrab, Balakumaran, Jung-Kim, and Tabtabai (2019) efforts such as the Hospital to Home "See you in 7" program focusing on follow-up clinic visits within 7 days of discharge from HF admission, have resulted in a reduction in 30-day readmission from 21.5% to 17.8% nationally between 2007 and 2015. So, the transition from hospital discharge to the outpatient setting is a critical time-point for patient care and safety because of the high risk for poor outcomes early post-discharge especially when they have multiple comorbidities, residual congestion or evidence of end-organ at the time of discharge (Goldgrab et al., 2019

**Facilitators and Barrier**

Constraints included the time limit to implement the new ideas, resistance to change by facility staff, low numbers of staff and stakeholder involvement in the implementation of the

project. The stakeholders were educated on how the project would potentially benefit the facility increasing their involvement in the project implementation.  The DNP student encouraged collaboration and open communication with the team members in order to remove barriers to the progress of the project implementation.

The QI project encountered unexpected barriers including the small number of patients examined due to the low admission rate during the holidays. Many patients admitted to the long-term care facility remained in the facility as residents and were provided care by the staff that received education on heart failure management when discharged to non-skilled beds. The results could be skewed as there were not enough patients discharged to their home to know if patients at home would have shown similarly positive outcomes. It was difficult to arrive at a result that represented the patients who were discharged to their homes in the community. The electronic health record (EHR) used by the long-term care facility was only designed to generate all-cause 30-readmission rate, so the patients that were admitted, discharged or readmitted were manually tracked by the DNP student. It was not possible to extract specifically the 30-day heart failure readmission rate from the EHR; hence manual data collection was the only option.

### Cost-Benefit Analysis

The administrator and the director of nursing were directly involved, and no cost was attached to the services provided.  Equipment such as computers used to collect necessary data for the project was already in use at the facility. The same electronic health record used by the facility was utilized for data tracking and collection; therefore, no cost was incurred. There was no need for new computer training for the staff since they were already trained on how to use the

existing technology. No cost was allocated to the electronic health record for data collection and analysis since the IT personnel utilized the software already being used by the facility.

In-services highlighting how to use the heart failure discharge readiness checklist were held with the following team members: the discharge planner and nursing staff. The in-service and staff education were held during working hours and on multiple shifts in order to be able to reach all the key staff and prevent extra cost to the facility in the form of overtime. The total costs include pre-project training and intervention delivery.

**Benefits** The benefit of the project to the facility was to increase knowledge of the nursing staff resulting in a possible decrease in the long-term care facility rate of 30-day readmission of elderly patients with heart failure. Consequently, it will lower financial penalties in Medicare reimbursement, lessen the burden of the care on family members, increase the quality of life, and improve the report card of the healthcare facility. The educational material given to the staff during the in-service may be used for the future education of new staff members. (See Appendix G for further cost-benefit analysis).

## Project Timeline

The timeline for this project is included in Appendix H

## Future Recommendations

After careful review of the project, the following recommendations are offered:

- The acute care setting would benefit more from the implementation of a readiness discharge checklist for heart failure.

- Computer software that generates exclusively 30-day readmission rate for heart failure will yield less biased results or outcomes.

- Patients that will be discharged to the community are needed for future QI projects of this nature.

The lack of the above features certainly affected the outcomes yielded by this project. Additionally, results would be improved by a similar project of longer duration, which would allow the researcher to collect enough data and yield less biased results.

**Conclusion**

Heart failure is a complex disease associated with multiple comorbidities and the leading cause of 30-day readmission among older adult in the US. Evidence-based research has demonstrated the positive effect of transitional care in the reduction of 30-day readmission among older adults in the United States. Staff and patient education, including the implementation of a discharge readiness checklist for heart failure on all patients in the context of the project, remain important in reducing 30-day heart failure readmission among older adults. Furthermore, due to high rates of morbidity and mortality indicated by 30-day readmission rates of elderly patients with heart failure, as well as the large financial burden sustained by readmission, it is imperative patient discharges be carefully planned by incorporating transitional care and the readiness HF discharge checklist. The gap in nursing practice can be narrowed by staff education making them aware of the key areas to focus on HF patients care such, medication, weight, diet, laboratory values and promptly communication with physician related any signs and symptoms of HF exacerbation. Patient/caregiver education is also of paramount value.

Hence, there is a need for the healthcare system to implement interventions that will identify patients that are at high risk for readmission and immediately begin to implement interventions with these patients. The heart failure readiness discharge checklist is a tool to help

medical staff initiate patient/caregiver teaching at the bedside, identify healthcare needs prior to discharge, and commence timely follow-up with a primary physician and cardiologist. Therefore, discharge planning interventions may help to reduce the rate of 30-day readmission in elderly heart failure patients and greatly improve their quality of life.

Additionally, the overall goals and objectives of the QI project were met although further work needs to be done to discover better interventions to improve outcomes. Prior to the QI project implementation, there was none existing plan to reduce 30-day hospital readmission in this facility as evidenced with a high rate of readmission. Post-intervention 30-day readmission rate decreased from 45% to 13%. Staff education with the readiness discharge HF checklist of patients has proven to be effective in reducing 30-day readmission rate in this facility. The result of this project has been disseminated to my colleagues and other Advanced Practice Nurses (APNs) in form of PowerPoint presentation and they are encouraged to use it in their practices to prevent 30-day hospital readmission of HF patients. I also shared the information with the stakeholder and staff of the facility.

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**Appendix A: Heart Failure Discharge Readiness Checklist**

MR #

Initial /Date
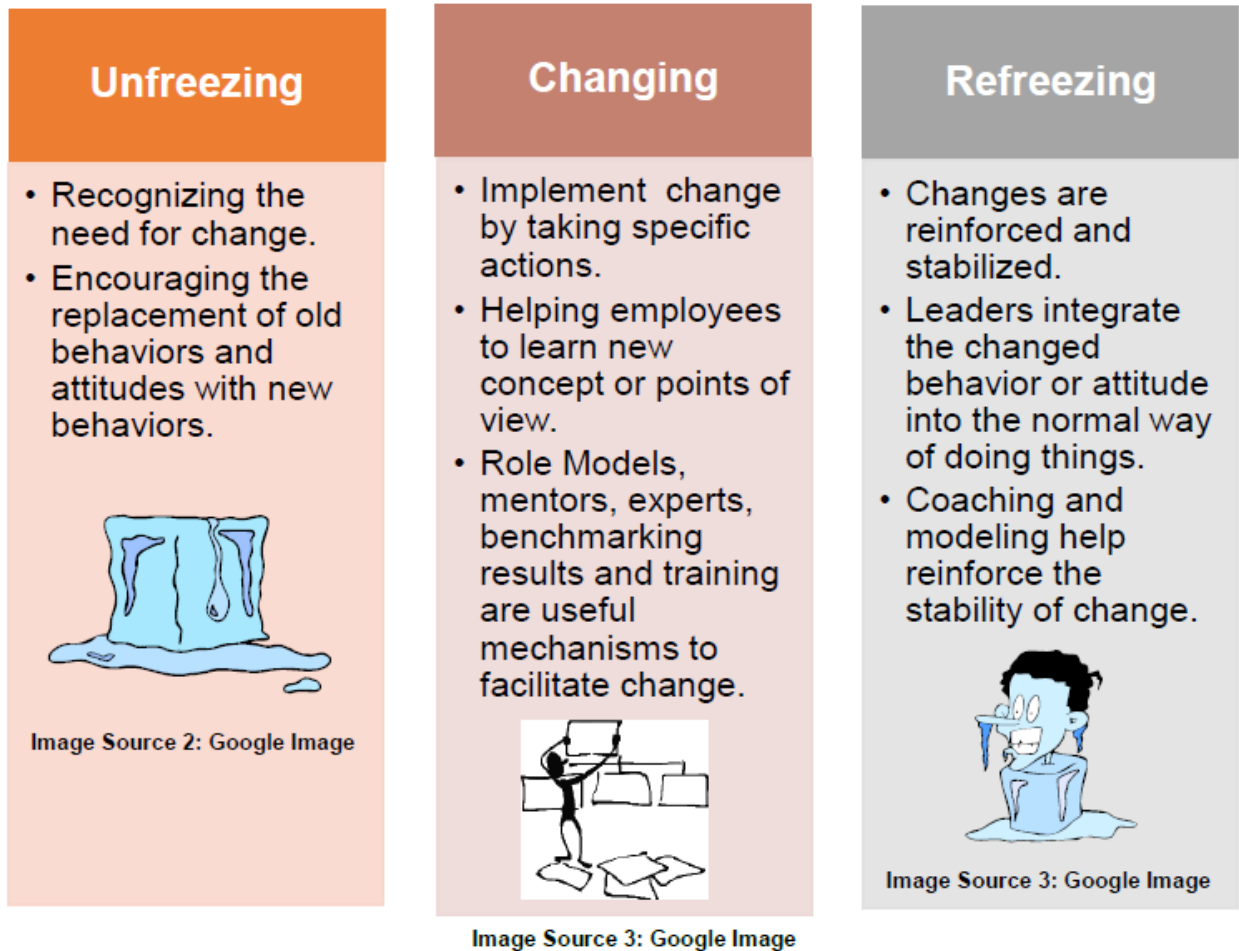
_____Review vital signs and current lab results including BNP

_____Review weight

_____Perform general assessment

_____Review discharge instructions

_____Review signs/symptoms to report to PCP (e.g. weight gain, SOB)

_____Reconcile medication regime

_____Patient and family education completed with teach-back

_____Prescriptions faxed or called in to pharmacy of choice

_____Give written discharge instruction with list of current medications

_____Schedule follow-up care with primary care physician within 7 days of discharge

_____Schedule follow-up appointment with cardiologist

_____Refer to home care services (Skilled Nursing, Physical Therapy, and Occupation Therapy)

_____Arrange for medical equipment to meet patient need

_____Visiting nurse to follow-up within 3 days of discharge

Must comment on reason for each unchecked item

Please return completed form to the DNP student

https://www.heart.org/-/media/files/professional/quality-improvement/target-heart-failure/targethf-discharge-checklist-ucm_496869.pdf?la=en&hash=02A6B2C3F58895BBD381D55DB9B774F29D4EE8EE
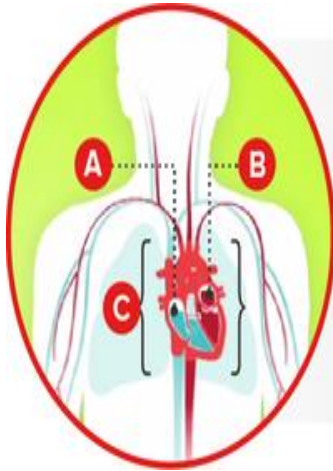
Appendix B: Lewin's Change Model

## Unfreezing

- Recognizing the need for change.
- Encouraging the replacement of old behaviors and attitudes with new behaviors.

Image Source 2: Google Image

## Changing

- Implement change by taking specific actions.
- Helping employees to learn new concept or points of view.
- Role Models, mentors, experts, benchmarking results and training are useful mechanisms to facilitate change.

Image Source 3: Google Image

## Refreezing

- Changes are reinforced and stabilized.
- Leaders integrate the changed behavior or attitude into the normal way of doing things.
- Coaching and modeling help reinforce the stability of change.

Image Source 3: Google Image

*https://www.google.com/search?q=picture+of+lewin%27s+change+model&tbm=isch&tbo=u&source=univ&sa=X&ved=2ahUKEwiUm9OJhsXcAhUJPa0KHcCJDUYQ7Al6BAgFEA0&biw=1920&bih=974#imgrc=hEijBrkX58p4kM:*

**Appenddix C:** Power Point Education Heart Failure of 30 day Readmission

Overview

## Background

- Heart failure treatment alone constituted $41.3 billion in total hospital costs (Agency for Healthcare Research and Quality (AHRQ) 2014)

## Introduction

- Through the Patient Protective and Affordable Care Act (PPACA), it began focusing on ways to reduce the 30–day hospital readmission rate for patients with heart failure.

## Facts

- 25% of patients admitted for HF are readmitted within 30 days, which occurs mostly within 15 days of discharge from a healthcare facility
- Agency for Healthcare Research and Quality (2013),

## facts

- A readmission rate of 61% occurs within 15 days of being discharged from the hospital, while the remaining 39% are readmitted in 16 to 30 days
- (Van Booven, 2013).

## Facts

▸ The cause of 30-day hospital readmission among patients with heart failure is a lack of pre-discharge intervention, post-discharge intervention, and bridging intervention.
▸ Kripalani et al. (2015),

## Facts

▸ Older patients with congestive heart failure who intensely followed up with their primary care physician within a week of discharge had a better outcome with a reduction of 29% in emergency department visits and 30-day readmission
▸ Vedel and Khanassov (2015)

## Facts

- Approximately 5.7 million American adults are living with heart failure (HF) and the projections are that the prevalence of HF will increase 46% from 2012 to 2030 with greater than 8 million adults living with the chronic condition.

- Recent trends observe a reduction in length of stay as well as in-hospital and 30-daymortality, whereas 30-day readmission rates and discharges to skilled nursing facilities have increased

## Facts

- A meta-analysis of the literature estimates that only 23.1% of hospital 30-day readmissions may be avoidable.
- Ziaeian, B., and Fonarow, G. C. (2016).

- A systemic review of interventions (such as patient education, discharge planning, medication reconciliation, scheduling follow-up before discharge, communication with outpatient providers, and follow-up telephone calls) implemented to reduce readmissions found that no single intervention alone was associated with lower 30-day readmission risk.
- Ziaeian, B., and Fonarow, G. C. (2016).

## Intervention

- An early trial of a nurse-directed multidisciplinary intervention providing comprehensive education to the patient and family, medication review, and intensive follow-up reduced readmissions by 56.2% and also improved quality of life scores
- Ziaeian, B., and Fonarow, G. C. (2016).

- An intervention targeting outpatient and inpatient HF patient in minority communities featuring bilingual nurses to counsel patients on diet, medication adherence, and self-management of symptoms at an initial visit and regularly scheduled follow-up phone calls found a 16.2% relative risk reduction in hospitalizations at one year.
- Ziaeian, B., and Fonarow, G. C. (2016)

## Intervention

- See handout for Teach back education toolkit
- Appendix D

- See readiness discharge checklist for heart failure- The implementation tool.

## Project Time Line

| Activities | November | December | January | February | March |
|---|---|---|---|---|---|
| Seek the approval from IRB. Conference with Stakeholders and the unit manager /the education session | | | | | |
| Obtain the current readmission rate for the facility | | | | | |
| Education of staff on Teach Back method and discharge readiness checklist | | | | | |
| Implementation of the discharge readiness checklist | | | | | |
| Continuous use of the intervention checklist | | | | | |
| Track hospital discharge and readmission. Data collection through follow-up phone calls | | | | | |
| Data entry into Point of care and review of the data collected from the computer software(point of Care)on line chart | | | | | |
| Data analysis and dissemination of information to the staff | | | | | |
| Reviewing the result with the stakeholders | | | | | |
| Submit project to Unacao board for review | | | | | |

## Conclusion

▸ There will be a collaboration between the DNP student, the nursing staff and the social worker during the implementation phase of this capstone project.

▸

THANK YOU!

**Appendix D: Pre and Post-test**

**Pre/Post Test**

1. True or False

   Furosemide is mostly used in heart failure patients to decease edema

2. Which medications are used in treatment of heart failure? Check all that applies

   a. Beta blocker

   b. Ace Inhibitor

   d. Cephalosporin

3. How much weight gain is considered significant in heart failure patients?

   a. 3 lbs. in 2 days

   b. 5 Ibs. in 2 weeks

   c. 2 Ibs in 1 day

   d. 4 Ibs in 1 day

4. True or false

   To obtain accurate weight patient should be weighed same time of the day with same clothes.

5. What are the warning symptoms of heart failure? Mark all that apply

   a. Shortness of breath

   b. Increase Cough

   c. Swelling

   d. Hemoptysis

6. People with heart failure mostly have readmission in the first:

   a. 30-days

   b. 60 days

   c. 90 days

7. True or False        Patient with heart failure should restrict sodium in diet

**Appendix E: Education Toolkit**

### Congestive Heart Failure Zones for Management

| Green Zone: All Clear | Green Zone Means: |
|---|---|
| Your Goal Weight: _____ <br><br> • No shortness of breath <br> • No swelling <br> • No weight gain <br> • No chest pain <br> • No decrease in your ability to maintain your activity level | • Your symptoms are under control <br> • Continue taking your medications as ordered <br> • Continue daily weights <br> • Follow low-salt diet <br> • Keep all physician appointments |

| Yellow Zone: Caution | Yellow Zone Means: |
|---|---|
| If you have any of the following signs and symptoms: <br><br> • Weight gain of 2 or more kilograms <br> • Increased cough <br> • Increased swelling <br> • Increase in shortness of breath with activity <br> • Increase in the number of pillows needed <br> • Anything else unusual that bothers you <br><br> **Call your doctor if you are going into the YELLOW zone** | • Your symptoms may indicate that you need an adjustment of your medications <br><br> ⇨ **Call your doctor, nurse coordinator, or home health nurse.** <br> Name:_____ <br> Number:_____ <br> Instructions: _____ <br> _____ |

| Red Zone: Medical Alert | Red Zone Means: |
|---|---|
| • Unrelieved shortness of breath: shortness of breath at rest <br> • Unrelieved chest pain <br> • Wheezing or chest tightness at rest <br> • Need to sit in chair to sleep <br> • Weight gain or loss of more than 3 kilograms <br> • Confusion <br> **Call your doctor immediately if you are going into the RED zone** | This indicates that you need to be evaluated by a doctor right away <br><br> ⇨ **Call your doctor right away** <br><br> Doctor:_____ <br> Number:_____ |

Adapted from Christus Schumpert, Shreveport, LA and Health Disparities Collaborative

https://innovations.ahrq.gov/qualitytools/red-yellow-green-congestive-heart-failure-chf-tool

**Appendix E*: Education Toolkit Continued**

**Education Material**

| Teach-Back Question | Area of focus |
|---|---|
| What is the name of your water pill | Medications |
| How much weight gain would you want to report to your doctor? 2-pound increase in 1 day or 5-pound increase in 1 week. How often should you weigh yourself? a. At the same time every day | Self-monitoring skills |
| What high-salt foods do you need to avoid/be aware of?  2000gm sodium diet. No salt or substitutes. Remove salt shaker from table. Pick low salt foods and read labels. | Diet modification |
| Please name 3-4 symptoms or warning signs of when you want to call the doctor? Shortness of Breath, Swelling, and feeling dizzy or weak, increase cough | Warning signs of action |
| What is the date of your follow-up appointment with your primary care doctor and heart doctor | Follow-up care |

At the conclusion of the teaching, each patient will be asked five teach back questions.

**Appendix F**: Data Collection Microsoft Excel

| Assigned Number | Admission date | Demographic Data | Heart Failure 30-Day Readmissions | Education: Pre/post Test |
|---|---|---|---|---|
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**Appendix G: Cost-Benefit Analysis**

2 Registered Nurses- Unit managers/Education directors------10 hours @ S35/hr.---- $700

10 Licensed Vocational Nurses—Bedside education--------------5 hours @$20/hr.------$2000

1 Discharge Planner-------------------------------------------------5hrs     @ $35/hr.------$175

1 Dietician---------------------------------------------------------------5hours @ $40/hr.-----$200

4 Medication Aides-----------------------------------------------------5hours @$15/hr.-----$300

1 Home Health staff----------------------------------------------------2hours @50/hr.-------$100

Project director (DNP student) volunteer time for DNP program requirement. The result of the

project will be analyzed by the project manager. The discharge planner and program director will

make follow-up calls after 30 days of discharge from the long-term care facility/skilled nursing
facility

**Materials:**

Designing and Printing of Education materials: 50 copies at $1.00 each-----$50.00

Subsequent copies will be printed at the facility copier with permission of the administrator

Computer and EHR (Point of Care) ------Already existing in the facility

Total Expenditure:

$3550.00. The amount is an estimation that may not be incurred since the education session will

be scheduled during clocked in time for the staff.

The value of the project to the facility will be savings

of $75,000 to $100,000 either tangible or intangible and the facility will improve in its national
report card

that will allow more patient referral to be made from other facilities. The knowledge acquired by

the staff will be utilized to deliver quality safety care to the patient and will be disseminated to

new employees.

Appendix H: Project Timeline

| Activities | October | November | December | January | February/March |
|---|---|---|---|---|---|
| Receive approval from IRB. Conference with Stakeholders and the unit managers. Plan education sessions | ▓ | | | | |
| Obtain the current readmission rate for the facility | ▓ | | | | |
| Education of staff on Teach Back method and discharge readiness checklist | ▓ | | | | |
| | | | | | |
| Implementation of the discharge readiness checklist | | ▓ | ▓ | ▓ | |
| Continuous use of the intervention checklist | | ▓ | ▓ | ▓ | |
| Track hospital discharge and readmission. Data collection through follow-up phone calls | | ▓ | ▓ | ▓ | |
| Data entry into Point of care and running of the data collected from the computer software (point of Care) on line chart | | | | | ▓ |
| Data analysis and dissemination of information to the staff | | | | | ▓ |
| Reviewing the result with the stakeholders | | | | | ▓ |
| Submit project to Umass board for review | | | | | ▓ |

**Appendix I:** IRB Approval

<span style="float:right">100 Venture Way, Suite 116<br>Hadley, MA 01035<br>Telephone: 413-545-3428</span>

# UMassAmherst

## Human Research Protection Office

**Date:** October 15, 2018
**To:** Nkechi Ukomadu, Nursing
**Project Title:** Reducing 30-Day Heart Readmission Among Elderly Population in Long-Term Care
**IRB Determination Number:** 18-208
The Human Research Protection Office (HRPO) has evaluated the above-named project and has made the following determination based on the information provided to our office:

☐ The proposed project does not involve research that obtains information about living individuals
[45 CFR 46.102(f)].

☐ The proposed project does not involve intervention or interaction with individuals OR does not use identifiable private information [45 CFR 46.102(f)(1), (2)].
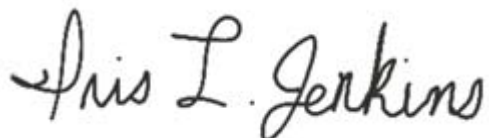
☒ The proposed project does not meet the definition of human subject research under federal regulations [45 CFR 46.102(d)].
**Submission of an Application to UMass Amherst IRB is not required.**
Note: This determination applies only to the activities described in the submission. If there are changes to the activities described in this submission, please submit a new determination form to the HRPO prior to initiating any changes.
A project determined as "Not Human Subjects Research," must still be conducted in accordance with the ethical principles outlined in the Belmont Report: respect for persons, beneficence, and justice. Researchers must also comply with all applicable federal, state and local regulations as well as UMass Amherst Policies and procedures which may include obtaining approval of your activities from other institutions or entities.
Please do not hesitate to call us at 413-545-3428 or email humansubjects@ora.umass.edu if you have any questions.

*Iris L. Jenkins*

Iris L. Jenkins, Assistant Director
Human Research Protection Office