

12-2017

Evidence-Based Discharge Education Guidelines to Improve Adherence to Self-Care and Decrease 30-Day Readmissions for Older Heart Failure Patients

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EVIDENCE-BASED DISCHARGE EDUCATION GUIDELINES TO IMPROVE
ADHERENCE TO SELF-CARE AND DECREASE 30-DAY
READMISSIONS FOR OLDER ADULT
HEART FAILURE PATIENTS

by

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Acknowledgments

I would like to extend my deepest gratitude to my faculty advisor, Dr. Laura Muñoz for her unwavering support, collegiality, and mentorship throughout my Doctor of Nursing Practice (DNP) project. She has mentored, coached, and helped me through my academic journey. Her keen sense of attention to details and high expectations for academic excellence has been invaluable in the development of and presentation of my DNP project.

I also would like to thank my mentors, Dr. Jose Villa, Dr. Rosco Gore, and Colonel Carla Dickinson for their encouragement and support. Without their support, I could not have completed my DNP program. Lastly, I am thankful to the organization where my Quality Improvement (QI) project was implemented. I could not have accomplished my project without their outstanding leadership support. My heartfelt gratitude goes to the entire Telemetry Nursing staff who demonstrated professionalism, commitment, and dedication to providing the highest quality nursing care by implementing the QI project for older heart failure patients.

Finally, I would like to thank my special friends, family, and professional colleagues who have encouraged me and supported me through this journey. During difficult times, my friends were there to support and make me smile. A special thank you to Juan Hinojos for his outstanding support and love he has given me, so I could focus on my academic requirements. My sincere thanks to all!

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Abstract

Heart failure is a complex, debilitating, chronic disease characterized by high mortality and frequent hospital readmissions. Heart failure affects 5.7 million people in the United States with 670,000 new patients diagnosed each year. Patients are most vulnerable during the transition from the acute care setting to home. Limited patient knowledge on symptom recognition leads to detrimental outcomes for the patients; therefore, discharge education is paramount for decreasing readmissions. The national benchmark for 30 day readmission is 27%. The purpose of this Quality Improvement project was to improve compliance with the 2013 American Heart Association guidelines through discharge education by Telemetry staff for heart failure patients age 55 years of age and older. The 30 day readmission rate will also be assessed. Seventy charts were reviewed retrospectively, and 32 patients met the inclusion criteria as patients discharged from the Telemetry Unit, which is in a 350-bed military hospital located in South Texas. Licensed nursing staff implemented evidence-based heart failure discharge education using the teach-back methods before patients discharged to home. The average age of heart failure patients was 76 years. At 12 weeks after implementation, 91% (29 of 32) of patients received heart failure discharge education. Of the 32 patients that received heart failure discharge education, two patients were readmitted to the Telemetry Unit within 30 days, thus decreasing readmission rate to 6.25%. This evidence-based Quality Improvement project is beneficial in standardizing the patient discharge education. The heart failure discharge education program has a significant implication for healthcare professionals uniquely designed to meet the learning needs of patients with heart failure.

Overview

Cardiovascular disease is the leading cause of death for men and women in the United States. Heart failure affects over 23 million people worldwide and 5.7 million individuals in the United States. (Davis et al., 2012; Ruppap, Cooper, Mehr, Delgado, & Dunbar-Jacob, 2016; White, Garbez, Carroll, Brinker, & Howie-Esquivel, 2013). Heart failure is a complex, debilitating, chronic disease characterized by high mortality and frequent hospital readmissions (Boyde et al., 2016; Boyde et al., 2012). Each year about 610,000 people die from heart disease, and 670,000 new patients are diagnosed with heart failure (Ruppap et al., 2016). In the state of Texas, a total of 1,703 heart failure patients died, a 2.91% mortality rate, in 2012. Of the 1,703 deaths, 128 deaths occurred in San Antonio and were caused by heart failure. This statistic equates to a 2.53% mortality rate (Texas Health Care Information Collection, 2012). Treatment for heart failure is also a significant economic burden to society. Each year, it costs the nation \$30.7 billion to treat heart failure. Patients with heart failure often suffer from comorbidities, such as chronic obstructive pulmonary disease, dementia, renal failure, hypertension, and diabetes (Ruppap et al., 2016). Heart failure prevalence is projected to increase 25% by the year 2030 (Centers for Disease Control and Prevention, 2016; White et al., 2013).

Pathophysiology of Heart Failure

Heart failure is a condition in which the heart cannot pump enough blood to supply all of the oxygen the body requires. Heart muscle changes from loss of critical functional myocardial cells after injury from secondary disease processes such as the history of myocardial infarction, diabetes, hypertension, end-stage renal disease, chronic obstructive pulmonary disease, and cardiomyopathy.

Chronic heart failure can result from abnormalities of the systolic or diastolic dysfunction with ejection fraction that is preserved or reduced (normal ejection fraction is 50% to 75%). The patient can have a normal ejection fraction but still have heart failure symptoms. Preserved ejection fraction is described as having ejection fraction more than 50% whereas reduced ejection fraction is less than 40%. Ejection fraction is defined as the percentage of blood leaving the heart with each time it contracts (heartbeat). When the heart contracts, it ejects blood from the two ventricles (pumping chambers) and with relaxation of the heart, the ventricles refill with blood. Without enough ejection fractions, the patient easily fatigues because not enough oxygenated blood is available to the circulatory system (Jones, 2017). Heart Failure is characterized by unpredictable, unstable exacerbation of symptoms. Older patients with heart failure suffer a significant symptom burden beyond the typical manifestations of heart failure such as shortness of breath, orthopnea, weight gain, lower extremity edema, and fatigue. Based on types of heart failure, medical treatment may differ.

Heart failure impairs activity tolerance and quality of life (Jones, 2017). As a result of poorly managed heart failure, frequent readmissions result from inadequate heart failure knowledge, inadequate transition care from inpatient to outpatient, delayed follow-up with a provider, and non-adherence with the treatment plan (Messina, 2016).

The complexity of heart failure care is attributed to complex healthcare systems and high cost. Today's complex health care system requires organizations to be flexible so that they can align themselves to become profitable and efficient healthcare systems (Chaffee & McNeil, 2007; Lindberg, Nash, & Lindberg, 2008). Due to the complexity of heart failure, no single intervention has proven to decrease 30-day readmissions; however, using multiple approaches to managing heart failure is effective in reducing hospital readmissions (Kociol et al., 2012).

Studies show that discharge education is one of the most effective strategies for reducing readmissions (Ross, Ohlsson, Blomber, & Gustafsson, 2015). The aim of this project is the implementation of 2013 American Heart Association (AHA) guidelines which recommend the development of a discharge education program for 55 years of age and older heart failure patients to improve patient quality of care and reduce frequent readmissions in a Telemetry Unit, located in South Texas.

Problem Statement

There is a significant gap in coordinating the patient discharge process for heart failure patients who are 55 years of age and older. Unmanaged, severe heart failure symptoms are becoming a major challenge for healthcare organizations (Alpert, Smith, Hummel, & Hummel, 2017). Despite medical and technological advances decreasing recurrent readmissions, the national benchmark for 30 day hospital readmission is at 24% to 27% (Boyde et al., 2016; Butler 2012). The organization's 30 day readmission rate is higher than the national benchmark. Evidence shows that predominant reasons for readmission included patients not understanding their disease process, lack of knowledge on the importance of follow-up appointments, poor adherence to treatment plan, and not having the resources needed to follow the treatment plan (Re-engineered Discharge, 2012). Early symptom recognition and adherence to self-care management are crucial to decreasing readmissions and improving the quality of life (Boyde et al., 2012). The opportunity exists to improve discharge education to facilitate the continuum of care for the patients during the vulnerable period of transition from the acute care setting to home (Schell, 2014).

Background of the Problem

It is important that all heart failure patients receive timely follow-up appointment before

discharge; however, inconsistent delivery of patient education along with not knowing who is primarily responsible for follow-up appointments makes it challenging. Moreover, follow-up appointments were difficult to schedule because individual patients were not managed by a single service for the patient's follow-up care. The organization's executive leaders are aware of the complexity of transitioning the patients from discharge to home or other outside facilities; however, initiatives have shown limited success due to a lack of buy-in, limited resources, and the mission priority of the organization which relates to readiness of wartime mission. The organization's primary mission is readiness, and the emphasis is on training for a wartime mission. The secondary mission is to provide patient care to beneficiaries.

At the unit level, patient turbulence, staff experience level, and staff turnovers significantly impact day-to-day patient care mission. The challenge lies in the complexity of the organization and the system that supports the discharge education for heart failure patients as they navigate from inpatient to outpatient care. The cardiology service does not manage all heart failure patients, but the majority of the patients are admitted from the Primary Care Managers, from the Internal Medicine service.

Providing adequate discharge education is challenging due to constant personnel changes and deployment missions. There is a massive influx of new staff during the year; therefore, sustainment of any program is a significant problem for the organization. Additionally, in the Telemetry Unit there is a high number of patients discharged on the same day, resulting in the high turbulence of activity. In addition, there are many staff members (60%) who have less than 3 years of experience and may be at a novice level in critical thinking skills. Implementing HFDEP required a lot more time than routine patient education. Using the teach-back method to teaching the patient requires clinical judgment. By asking the patient knowledge, the nurse could

determine if the patient needs more time or use different teaching strategies. Most nurses spend no more than 15 to 20 minutes covering the content of the discharge summary, which is not unique to heart failure topics. Currently, the patient only receives what is written in the discharge summary which includes instruction on how to take medications and medical regimen to follow. The organization has a standardized patient education handout available; however, unless the physician activates the heart failure teaching material in the electronic medical record (EMR), the patient may not get the written material. Also, the teaching provided does not specifically address issues related to heart failure.

Unit leaders are assigned to their unit for 2 to 3 years before they are moved to another duty station; consequently, there continuity of care is absent. Furthermore, there are other significant barriers due to the lack of internal structure and resources to support the optimal discharge planning process. Fragmentation of care compounds the problem, and the lack of a standardized approach to providing discharge education also leads to poor quality of care.

Providing appropriate discharge education is paramount to facilitate patient participation Patient participation in their self-care management (Kociol et al., 2012; Regalbuto, Maurer, Chapel, Mendez, & Schaffer, 2014; Vreeland, Rea, & Montgomery, 2011). Moreover, well-planned discharge education reduces the probability of non-adherence and aids in early detection of clinical symptoms. Often, these patients do not have a good support system at home to assist with taking medications, making follow-up appointments, and keeping track of the diary. Davis et al. (2012) discussed the importance of having a support system since self-care confidence mediates the relationship between social support and self-care. The more support the patient has at home, the more the patient tends to practice self-care management (Davis et al., 2012).

Self-care is an essential component of heart failure management. Once the patient is discharged from the hospital, the patient must be able to follow the discharge instructions and medical regimen. Taking medications, assessing daily weights, maintaining daily activities, and monitoring fluid is all self-care the patient can do for him or herself. Also, the patient must be able to recognize the heart failure symptoms and actions to take in case symptoms develop. If the patient can do self-care appropriately, frequent readmission can be prevented. Quality Care Improvement is often used to measure the effectiveness of symptom management interventions. Quality indicators often reveal existing clinical problems and provide the successful implementation of EBP change in clinical practice. Health outcome measures must be a part of the EBP environment to determine whether EBP interventions make a difference (Melnyk & Fineout-Overholt, 2015).

Background Information on Telemetry Unit

The patient population consists of active duty and retired military service members and family. Since heart failure patients are admitted to multiple medical-surgical units, it was important to review 30-day readmissions data at the aggregate level throughout the hospital. Heart failure patients are admitted to all inpatient units, making it challenging to manage heart failure. Figure 1 shows the number of patients admitted to other inpatient units, including the Telemetry Unit, from November 1, 2016 to January 19, 2017. Out of 10 inpatient units, the Telemetry Unit had the highest heart failure admission rate at 41% (N = 37). The data clearly show that heart failure is an important diagnosis for the Telemetry Unit. For this reason, the Telemetry Unit was selected for this Quality Improvement (QI) project.

The top five admitting patient diagnoses, as described in Figure 2, are chest pain, acute coronary syndrome, arrhythmias, congestive heart failures, and obstructive sleep apnea. Other

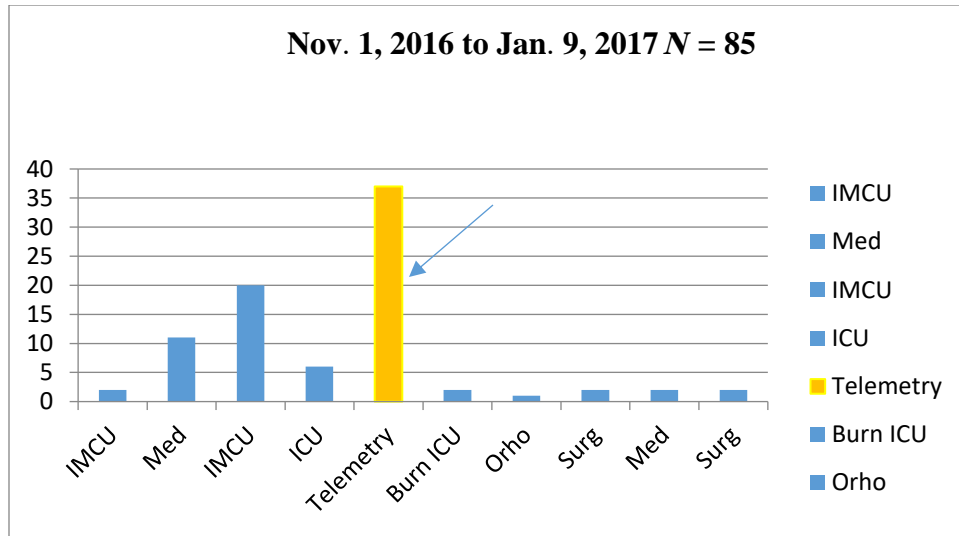


Figure 1. Highest Heart Failure Admissions by Units.

patient diagnosis consists of migraine headache, asthma, and other diagnosis not requiring telemetry monitoring.

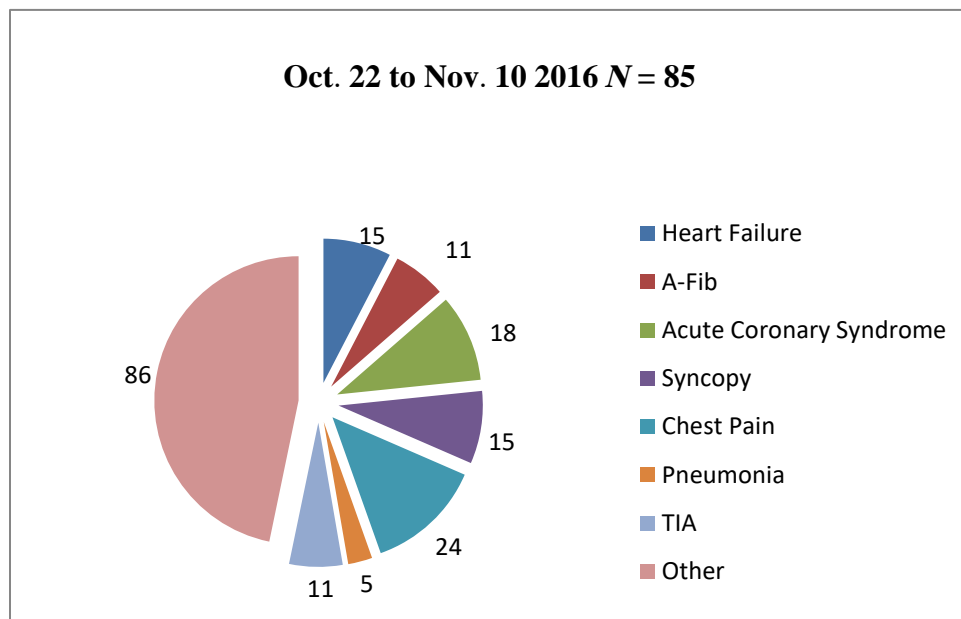


Figure 2. Telemetry Unit Top Seven Admitting Diagnosis. The larger 86% represents a mix of one or two diagnoses such as pneumonia, chronic obstructive pulmonary disease, infection, renal failure, and others.

The Telemetry Unit can only accept stable patients or, patients requiring monitoring, every 4 hours; however, they cannot accept patients requiring intravenous cardiac/insulin/sedation drips or chemotherapy, patients with arterial lines, large bore central catheters, pulmonary artery catheters, and central venous pressure monitoring catheters. Furthermore, the Telemetry Unit does not admit patients requiring mechanical ventilation, conscious or moderate sedation, intracranial pressure monitoring and active or rule out tuberculosis patients, due to a lack of negative pressure rooms.

Clinical Relevance

Appropriate discharge education is crucial to preventing hospital readmissions. There is a significant gap in coordinating the patient discharge process for heart failure patients 55 years of age and older. As a result of fragmented discharge process, patient education is often omitted. Unmanaged, severe heart failure symptoms have been found to become a major challenge for healthcare organizations (Blauer, Frei, Schnepf, & Spirig, 2015). The Telemetry Unit is one of 24 other inpatient units where the heart failure patients are admitted.

The following contributing factors were identified as gaps in the discharge education process: (a) the organization does not have an heart failure Nurse Educator who can provide heart failure education, (b) the organization does not have a transition care coordinator to ensure patients are transitioned smoothly from the acute care setting to home, (c) the organization does not have a case manager to handle follow-up appointments, (d) and many patients do not get follow-up discharge appointments with the physician who admitted them. Additionally, the organization does not meet the 2013 heart failure discharge education guidelines. No standardized evidence-based discharge education process exists. Moreover, there is a lack of technology supporting nursing documentation. Gaps in nursing initiated orders results in errors

and barriers to quality documentation. A well-designed technology allows nurses to document accurately on care delivered and serves as a mechanism to communicate with interdisciplinary team members, thereby providing continuity of care (Collins, Fred, Wilcox, & Vawdrey, 2012).

There is a lack of an identified coordinator of care to initiate follow-up phone calls and coordinate the follow-up appointments. There is no one clinic or provider manages heart failure patients. Approximately 60% of heart failure patients are followed by the Internal Medicine Clinic providers with multiple teams rotating through the service. Here too, the providers who admit the patient may not be the same provider for a follow-up visit. This results in fragmented care.

In the current process on the Telemetry Unit, which was initiated 2 years ago, the patient is given a pre-test upon admission, before heart failure education, by the admitting nurse, followed by a post-test before discharge. There is only one version of the pre-and post-test which consists of 6 items in a True/False format. Regardless of how often these patients are admitted, the same quiz is given so that the patients may memorize the material instead of gaining the heart failure knowledge. The nursing staff collects the pre and post scores but does not review for comparison to see how well the patients retained the knowledge. No one has been collecting the data for years in which this process has been in place; therefore, the benefits of the process are unclear. In the other 23 inpatient units which include the Telemetry Unit, there is no heart failure patient education provided upon admission or discharge unless the physician orders heart failure teaching in the discharge summary note.

Furthermore, the current process of discharge education was compared with the national 2013 AHA guidelines to determine if heart failure patients were offered evidenced-based, standardized patient education and were found to be inconsistent. Implementation of evidence-

based discharge education supports the organization's strategic goal and the objectives of the Department of Defense Military Health System. Finally, modification to the process of heart failure education is crucial due to an external accrediting agency's demand for improvement. The Joint Commission and the 2013 AHA both support the importance of 6 topics to be covered for discharge education: (a) discharge medications, (b) activity level, (c) diet, (d) follow-up appointments, (e) weight monitoring, (f) and procedures to follow if symptoms worsen (Regalbuto et al., 2014; The Joint Commission, 2016).

Project Purpose

The purpose of this QI project was to improve adherence to the 2013 American Heart Association guidelines through discharge education by Telemetry staff, thereby decreasing 30-day hospital readmissions among patients age 55 years of age and older who are diagnosed with heart failure. This QI project sought to improve knowledge in symptom recognition and adherence to self-care management by heart failure patients.

Aims and Project Objectives

The program objective was to implement the 2013 AHA guidelines which recommend a discharge education program to meet the healthcare needs of older heart failure patients (AHA, 2016; Yancy et al., 2013). This evidence-based QI implementation project aims to implement guidelines, recommended by AHA and The Joint Commission, to improve the discharge education process for heart failure patients, 55 years of age and older, in the acute care Telemetry Unit located in South Texas (The Joint Commission, 2016; Yancy et al., 2013). The heart failure education process begins when a patient is admitted to the Telemetry inpatient unit and the process of heart failure discharge education ends when the patient is discharged to home or another facility. By modifying the process, the short-term objective was to improve adherence to

a patient receiving discharge education. The long-term objective is to decrease 30-day readmissions on the Telemetry Unit.

General and Specific Aims of the Project

The general aim of this project was implementation of a discharge education program for heart failure patients over a 3 month period that ensured that 90% of patients 55 years of age and older received symptom management and self-care management guides based on 2013 AHA guidelines before discharge from the acute care setting to home.

The Specific Aim Statements:

1. By June 12, 2017, 90% (N =68) of the Telemetry RNs and Licensed Vocational Nurses will increase use of the HFDEP booklet which contains symptom recognition and self-care management guidelines based on 2013 AHA guidelines using the teach-back method.
 - The DNP student conducted 15 training sessions lasting 150 minutes for all shifts by June 6, 2017. The training sessions focused on the heart failure discharge education program.
 - The DNP student offered two to three additional class sessions, as make-up classes, to ensure all training is completed before program implementation.
 - The DNP student and the Telemetry Unit leaders selected four heart failure champions who are knowledgeable on heart failure to organize the internal training schedule.

- 2. By September 12, 2017, RNs and Licensed Vocational Nurses will achieve 90% adherence in providing discharge education using teach-back methods and self-care management guidelines to heart failure patients before discharge.
 - Improve staff adherence to using the HFDEP booklet, as evidenced by documenting the completed education in the EMR.
 - Heart failure patients, 55 years of age and older, receive a copy of the HDEP booklet; containing educational material based on 2013 AHA guidelines, before discharge.
 - The DNP student will collect post-implementation data on documentation of discharge education using the teach-back method and teaching material provided to the patient 90 days after program implementation, by September 12, 2017.
 - The Unit Charge Nurse will track the total number of HFDEP booklets offered to heart failure patients at the end of program implementation.
- Within 90 days of program implementation, the discharge education will contribute to decrease 30-day readmissions on the Telemetry Unit, below the national benchmark. The national benchmark for 30-day readmissions is at 24% to 27%.

Clinical Question: PICO Question

Population: Telemetry Unit patients, 55 years of age and older, with an admitting diagnosis of heart failure.

Intervention: Evidenced-Based Discharge Education focusing on six core heart failure topics.

Comparison: Compared with the current process of providing discharge education.

Outcome: Adherence to 2013 AHA discharge education guidelines, by Telemetry staff members, and reduction of 30-day readmissions.

Question: Does implementation of discharge education on Telemetry Unit based on 2013 American Heart Association guidelines, improve discharge education and reduce 30-day readmissions of heart failure patients 55 years of age and older when compared to current discharge education?

The Literature Review

Discharge, as a part of discharge planning, has been a long-term strategy to assist patients in making a smooth transition from the inpatient to outpatient settings (Feltner et al., 2014). This is also true for heart failure patients who have a high rate of readmission. Numerous discharge planning educational interventions have shown to be effective in increasing heart failure knowledge, self-care management, and adherence to medical regimen, while simultaneously reducing hospital readmissions (Boyde et al., 2016; Boyde et al., 2012; Davis et al., 2012; Koberich, 2016; Mahramus et al., 2014). An experimental study by Koberich (2016) found that patients, who keep a self-diary of self-care management by detecting early signs and symptoms of heart failure are more prone to control the disease and symptom management; thereby, avoiding hospital readmissions.

Improvement in the quality of care and patient education are directly linked with nurses playing a crucial role in patient education. Nurses understand the importance of adherence to heart failure discharge education. According to the American Nurses Association (ANA) Scope and Standards of Cardiovascular Nursing, patient education is a fundamental responsibility of the nurse (Rasmusson, Flattery, & Baas, 2015). Two studies by Boyde et al. (2016, 2012) found that

patient knowledge and self-care behaviors improved by using a patient-centered self-care guide, combined with a video. The first study, by Boyde et al. (2012), was a pilot study which showed a positive effect, for both groups using the multimedia, knowledge on self-care behaviors. The later study, by Boyde et al. (2016), was a randomized control trial using a multimedia educational intervention. Both Ruppap et al. (2016) and White et al. (2013) conducted systematic reviews and meta-analyses to determine how effective different educational interventions were on medication adherence and decreasing readmissions. Both studies showed that the teach-back method and use of multi-media interventions had a significant effect on reducing readmission and mortality rates.

Substantial evidence was provided by Feltner et al.'s (2014) systematic reviews and Ruppap's (2016) meta-analysis. Feltner et al. (2014) examined a total of 47 randomized controlled trials that compared transitional care interventions, varying from the home-visiting program, including the tele monitoring with usual care. The authors found that home-visiting programs and multidisciplinary heart failure clinic interventions (more physician contacts, access to the multidisciplinary team) reduced all-cause readmissions and mortality. In the study by Ruppap et al. (2016), 57 eligible studies on medication adherence interventions to decrease 30-day readmissions and mortality were selected. The results showed that there was a significant effect on reducing readmissions and decreasing mortality. Another systematic review by Burke, Guo, Prochazka, and Misky (2014), showed that by implementing the Ideal Transitions in Care framework, which consists of 10 domains, nursing staff could ensure safe transitions of care for heart failure patients and a reduction in readmissions. The authors selected 66 articles for the final analysis, with a median sample size of 283 patients. The most significant finding of the

study was that reduction of readmissions was associated with implementing the Ideal Transitions in Care.

Other literature suggests that nurses desire to provide quality discharge education; however, due to nurse's knowledge gaps and the lack of time, educating patients gets left out. A timely and efficient discharge process is paramount for a patient's ability to manage symptoms and adherence to self-care management (Vreeland et al., 2011). The literature demonstrated that a multifaceted education approach using both videos was an effective method to improve patient outcomes and improve clinical practice. Although these studies show that educational interventions were effective, the need for additional research was a consistent recommendation found in several of the studies. Out of 12 articles reviewed, 40% of the studies were a randomized control trial with sample sizes ranging from a moderate 37 to a large sample of 276. The level of evidence ranged from I (systematic review and/or meta-analysis) to VI (descriptive studies). The weakness of several of the studies was the small sample size. The central themes of the studies were various interventions such as video, interdisciplinary team approach, and patient education material focused on patient education to improve patient knowledge on self-care management. Several studies stressed the importance of the patient understanding the discharge teaching and facilitating the patient's ability to perform self-care, because a lack of understanding and adherence may adversely affect outcomes. Recommendations from the several studies were that clinicians should make every effort to engage the patients and ensure they actively participate in self-care management (Regalbutto et al., 2014; Yancy et al., 2013).

According to Mahramus and et al. (2014), self-care has been a strategy used, for over 30 years, to promote patient engagement in their care. Although this is true, there are additional procedures such as adherence to the treatment plan, monitoring of symptoms, and taking

appropriate actions to manage symptoms once they are discharged to home, which may result in decreasing the readmission rate. Even though few studies have shown positive results on patient education leading to decreased 30-day readmissions, many studies showed mix results. Due to the complexity of heart failure, no single program has been proven to reduce 30-day readmissions; however, using multiple approaches (heart failure education written material and video) to managing heart failure has shown to be effective in reducing hospital readmissions (Davis et al., 2013; Kociol et al., 2012).

Teach-Back. According to Peter et al. (2015), teach-back methods are effective and address the complexity and health literacy of today's patients. Teach-back is an easy-to-use, useful communication tool utilized during the discharge education process. The authors reported that teach-back had improved patient learning outcomes by engaging the patients and their families. Furthermore, teach-back implementation was linked to a more effective discharge process, thus ensuring a safer transition from hospital to home (Peter et al., 2015).

A prospective cohort study by White et al. (2013) focused on the nursing staff educating the patients using the teach-back methods. In this study, the researchers evaluated the effectiveness The study subjects were patients ages 65 years of age and older, who had been admitted to the cardiology and medical inpatient units at the University of California, San Francisco Medical Center. The data, collected for nearly a year, showed a significant improvement in patient knowledge and adherence to self-care management; however, there was no effect on reducing 30-day hospital readmissions. The results of the study showed that patients correctly answered 75% of the teach-back questions, patients correctly answered during the follow-up visit. The time spent by the nursing staff teaching patients is significantly associated with positive results in a patient response ($p < 001$); however, correctly answering questions was

not related to reducing 30-day readmissions (White et al., 2013). White and et al., in a 2015 study, found that using the teach-back method over twelve months, resulted in a 12% reduction in readmission for the intervention group.

Methodology

Clinical Setting

Best Medical Center is the largest hospital in the Department of Defense's Military Health System. To protect the identity of the hospital, the organization on this paper will refer as the Best Medical Center. The hospital is a 425-bed, Level I Trauma Center; the hospital receives more than 4,000 emergency room visits each month. The clinical setting for this DNP project was the Telemetry Unit which is one of 24 inpatient units within the Department of Nursing. This unit is considered a busy unit, open for 24 hours, has a bed capacity of 28, and maintains an average daily census of 19 to 24 patients whose average length of stay is 4.1 days. The unit has a high patient turn-over rate, and the average duration of stay varies by diagnosis such as atrial fibrillation, end stage renal disease, chronic obstructive pulmonary disease, diabetes, pneumonia, volume overload, syncope, hypertension, and shortness of breath. The unit has a total of 86 licensed staff members with a nurse to patient ratio of 1:4. The team consists of one registered nurse (RN), one licensed vocational nurse (LVN), and one certified nursing assistant (CNA). There are also telemetry technicians and administrative support staff that support the nursing team. In the Telemetry Unit 46.8% of the nurses have less than 3 years of nursing experience, and over 72.3% of the nurses are novice nurses with less than 5 years of nursing experience. Thomas and Kellgren (2017) used Benner's Novice to Expert Model to teach the novice nurses on knowledge, skills, and attitude for academic and practice setting to acquire critical thinking skills. Novice nurses have limited practical experience on how to apply

new

knowledge and expertise unique to new clinical environment or situations. When a nurse goes from novice to competent level, the nurse can prioritize and assesses the situation that is most relevant to making clinical decisions.

Population and Sampling

A convenience sample of 70 charts of heart failure patients was reviewed. Of those, 91% (n = 61) were from the Emergency Department, four from in-house transfers, and one from the clinic. The Internal Medicine Clinic was responsible for admitting 74% (n = 51) of the patients, cardiology service account for 24.6% (n = 17), and one from orthopedic service 1.4%, (n = 1). Of the 70 heart failure patient admissions, 32 patients met the inclusion criteria. Thirty-eight heart failure patients were excluded due to dementia, refusal of by patient for education, transfers to a higher level of care, death, or discharge of a Skilled Nursing Facility. Additionally, patients were excluded for a patient leaving against medical advice, less than 24-hour admission, and age less than 55 years.

Inclusion criteria:

- Patients age 55 years or older admitted to the Telemetry Unit with a primary diagnosis of heart failure between the period of June 12, 2017 and September 12, 2017.
- Both male and female
- All ethnic/racial groups
- Heart failure patients who are discharged home
- Beneficiaries of the BMC

Exclusion criteria:

- Patient with severe cognitive impairment as judged by orientation (time, place, or person) or severe dementia noted in the medical record or any decreased patients

period.

- Civilian trauma patients.
- Patient too sick or refusal of education.
- Patients discharged to a long-term care, death, in-house transfer, and outside the facility.
- Less than 24 admissions.
- Less than 55 years.
- Patient leaving Against Medical Advice
- Patients who cannot speak English.

For 30-day readmissions, aggregate, heart failure internal organization data was analyzed for 90 days after the QI implementation began.

Involvement of Agency Stakeholders

Program implementation required careful planning and forming a team to accomplish the DNP project. The DNP mentor and DNP advisor, was crucial in successful program proposal development. During the early phase of needs assessment, key stakeholders were identified. The Performance Improvement Consultant from the Internal Medicine Department was invaluable since she had a close working relationship with the Chief of Cardiology. The Chief of Cardiology and the Chief of the Department of Medicine Clinic provided guidance as to what the potential opportunity could be to decrease the readmission rates. The initial heart failure interdisciplinary team meeting was attended by six members who represented a variety of relevant departments (Internal Medicine, Nursing, Pharmacy, Discharge Planner, and Inpatient Quality Service).

Various process and system concerns were raised and discussed. Based on gaps identified, the most feasible solution was to develop a discharge education program to bridge the transition care gaps. The DNP student briefed the Department of Nursing's Clinical Nursing Officer who is in charge of the Nursing Services. Without her support, the program could not be implemented at the organization. She also discussed the intervention with the assistant Chief Nursing Officer. Their involvement facilitated the participation of every telemetry staff member. Each week, the DNP student met with the Outpatient Performance Improvement consultant. A heart failure workgroup was established which met on a weekly basis for 2 months to discuss strategies that would benefit the heart failure patients. The most important stakeholders with which the DNP student had to obtain buy-in from were leaders of the Telemetry Unit and the nursing staff. This acceptance was salient to successful program designing and implementation. The DNP student used the following strategies to mobilize the interdisciplinary team members to achieve the DNP project goals (Moran, Burson & Conrad, 2014):

- The purpose and goal were shared with the stakeholders, and buy-in of members.
- Reciprocal trust was established with the team members. The DNP student accomplished this by accountability, timeliness of the meeting, mutual respect, and fostering a culture of trust and transparency. The DNP student regularly engaged with interdisciplinary team members by sharing an update on heart failure data. The DNP student listened attentively to their concerns and offered solutions, when appropriate.
- Recognition and value of the unique role or skills each team member brought to the interprofessional collaborative team was offered. The DNP student accomplished this by giving stakeholders the task to be turned for the discharge education project. This facilitated participation by all stakeholders. The Telemetry staff collaborated with the

DNP student in developing the discharge education program, and the nursing initiated orders, in the EMR, to ensure program education was fully documented. The Telemetry staff members were tasked with the development of a draft discharge education program. They were provided with evidence-based journals and a sample copy of the proposed program to be developed. Empowering the staff to get engaged in the program development was crucial to establishing trust, recognizing the value of the unique role or skills that each of the team members brought to the program, and enabled them to feel like owners of the program to ensure successful program implementation.

- Roles and the responsibilities of team members to meet the project goals were established. The DNP student outlined roles and responsibilities for program planning and implementation. The Clinical Nurse Specialist, Performance Improvement consultant, and the Hospital Educator, along with the heart failure champions, leadership, and the DNP student provided the initial training to all Telemetry staff. The actual implementation of the program was to be implemented with oversight of the DNP student and Telemetry Leadership supervision. The stakeholder's roles are to provide feedback on the content material to ensure the accuracy of program content (Nutrition, Internal Medicine Providers, Pharmacy, PI consultants, and Medical and Surgical Supervisors).
- The DNP student functioned as the project leader for the team. She enlisted all stakeholders who could offer a value-added service to the program development. When needed, she provided direction and guidance to the team members to ensure the project was getting accomplished promptly. Continuous communication facilitated keeping the project on schedule.

Education Intervention

According to Melnyk and Fineout-Overholt (2015), Quality Care Improvement manages common symptoms such as fatigue, shortness of breath, and sleep disturbances caused by many acute and chronic diseases. Appropriate timing of interventions and effective discharge planning are examples of the Efficiency of Processes Indicators (Melnyk & Fineout-Overholt, 2015) and are assessed using a logic model.

An evidence-based QI project was implemented using the 2013 AHA guidelines for older heart failure patients in an acute care setting. Before the program was implemented, the DNP student sent the program agenda and objectives to the Telemetry nursing staff (see Appendix A) via email. The training began 2 weeks before the program was deployed. The target audience for the intervention was the telemetry leadership, licensed nursing staff, and other interdisciplinary team members either directly or indirectly supporting the heart failure program.

A sign-in roster (see Appendix B) was used to ensure that all staff attended the training. The DNP student identified the following materials and resources: a computer with a smart board, Power-Point teaching slides, a paper copy of the teach-back (see Appendix C), and the paper copy of the HFDEP booklet. The first part of the training involved a power point presentation which covered all topics supporting the HFDEP booklet. The second part of the training consisted of the DNP student and the heart failure champions reviewing use of the teach-back questionnaires to guide the teaching. At the end of the training class, question and answer sessions allowed the participants to ask any questions they may have had. Upon completion of the program, participants were asked to complete the continuation education evaluation tool (CEU) in order for them to receive 2.25 CEUs (see Appendix D).

Teaching material. The DNP student developed the HFEDP booklet in collaboration with the interdisciplinary heart failure team members which includes the Telemetry nursing staff and Telemetry Unit leadership, CNS, PI consultants, Chief of Internal Medicine, dieticians, clinical pharmacist, outpatient PI consult, heart failure Advance Practice Registered Nurse (APRN), and the Chief of Cardiology. Currently, the HFDEP booklet is only available in English. The BMC population is mostly English-speaking with the vast majority having a high school education.

The HFEDP content includes: a) description of heart failure disease, b) heart failure zones and warning symptoms of heart failure, c) medication diary, d) common heart failure medications, e) follow-up appointment access, and f) healthy heart diet (AHA, 2016; Regalbuto et al., 2014). The 30-page booklet also contains a daily log of weight, blood pressure, heart rate, physical activity tips, and fluid intake. Other helpful information is included in the booklet such as the importance of flu and pneumococcal immunization, and a link to AHA's Healthier Living with Heart Failure: Managing Symptoms and Reducing Risk patient education website (AHA, 2016). The educational material is written at a 6th-grade reading level. Face validity was gained through interdisciplinary team members that were subject matter experts in heart failure but were not the author of the HFDEP booklet. The interprofessional team members that were not part of program planning reviewed the content material and provided feedback and recommendations to ensure the education material was accurate and current. The sample content material is found in Appendix E.

Implementations at the Bedside

This is a QI project; therefore, upon discharge, implementation of discharge planning was conducted for all patients from the Telemetry Unit diagnosed with heart failure. The staff is

familiar with and knowledgeable about the heart failure topics since they currently use a similar heart failure education format when patients are admitted. The licensed registered nurses (RNs) and licensed vocational nurses (LVNs) used the HFDEP booklet and the teach-back questionnaires to provide the heart failure discharge education to patients. The primary or charge nurse was responsible for the identification of candidates for heart failure discharge education. This nurse determined patient eligibility by reviewing the daily dashboard of patients admitted with a diagnosis of heart failure. After receiving written discharge orders, the licensed staff, caring for the heart failure patient, using the discharge summary and the HFDEP booklet, provided the patient education. The teaching method used by the nurse was a teach-back method which has been reported to enhance learning outcomes, by engaging patients and families in recalling the knowledge (Peter et al., 2015). As the nurse taught the patient about heart failure topics, the nurse asked the patient to teach-back what he or she had just learned. The nurse then reviewed the content material with the patient using the teach-back methods on symptom recognition, and the heart failure education program content materials to promote self-care management. Furthermore, the nurse assisted the patient by providing written follow-up appointment information and reviewing the heart failure booklet material content on how to use their diary on weights, heart rate, blood pressure, fluid intake, and activity logs.

In an effort to promote a smoother and seamless transition of care, and enhanced communication between inpatient and outpatient care, patients were instructed to carry the HFEDP booklet to follow-up appointments or hospital admissions. Discharge education took approximately 20 to 45 minutes (mean 30 minutes). The time spent teaching was dependent upon patient knowledge from previous admissions, fatigue level, and interest of the patient.

Symptom recognition is based on heart failure color zones (see Appendix F) which emphasized decompensating symptoms to call the provider for an appointment (i.e., shortness of breath, weight gain more than five pounds in a week, increased swelling to lower extremities or dry hacking cough). Patients were asked about which symptoms brought them to the hospital, and then the warning zones were discussed to individualize to each patient. For repeat admission patients, the nurse would ask them what they knew about heart failure three color zones and heart failure disease condition. Some patients did not require full teaching because they were able to teach-back to the nurse. The nurse would only highlight the critical warning zones and have the patient recite the information. Patient teaching allowed for the patient to interact with the nurse and reinforced the training as needed. To improve nursing documentation, heart failure Nursing Initiated orders order set was developed for the EMR treatment flowsheet. Nursing Initiated Orders facilitated nurses to remember to carry out the nursing actions and document the teaching provided to the patient. Sign-off of the Nursing Initiated orders indicated that the nurse used the teach-back method to teach and the HFDEP booklet was provided to the patient. Once discharge education was completed, the licensed staff documented the content material taught in the treatment flowsheet for heart failure Nursing Initiated Orders (see Figure 3). A HFDEP booklet was given to the patient before discharge and recorded in the EMR. If the patient is a returned patient, the nurse would find out the patient's knowledge taught previous admissions, but the HFDEP booklet is not given the second time. The booklet contains 60 days of self-care diary. The Telemetry Unit maintains a record of which patient received the booklet.

The overall goal of the program education implementation is to ensure:

1. Staff implementation of an evidence-based heart failure discharge education program.
2. Standardized discharge education for all heart failure patients.

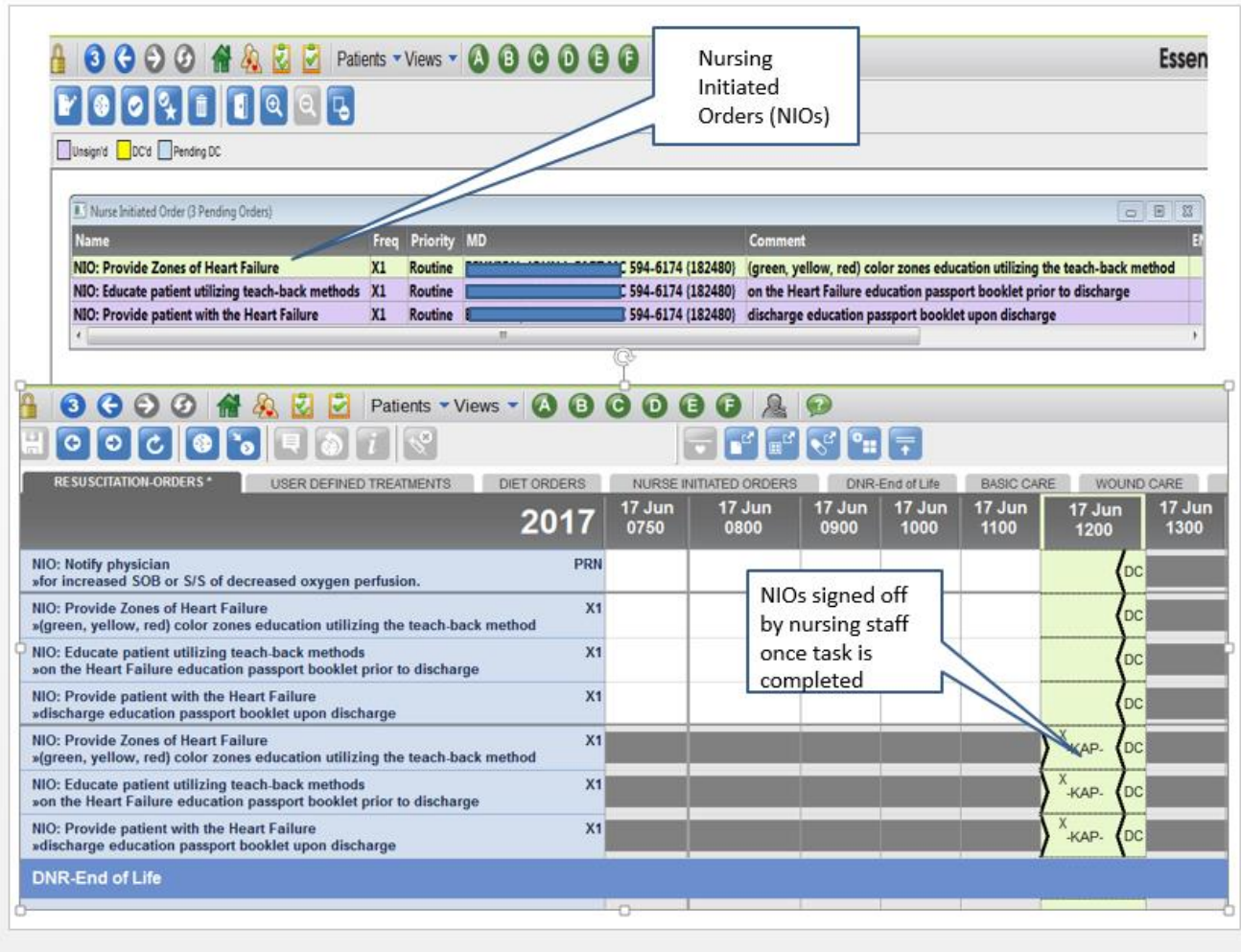


Figure 3. Nursing Initiated Orders for Heart Failure Education. Part 1 is the Nursing Initiated Orders for Heart Failure Discharge Education. Nursing Initiated Orders are activated in the Treatment Flowsheet. Part 2 is the Nursing Initiated Orders that the nurse signs off in the Treatment Flowsheet once the task is completed by initialing with individual nurse’s name.

3. Staff documentation of discharge education.
4. Utilization of patient education booklet upon discharge.

The proposed program budget is feasible and cost-effective when considering that return on investment for the avoidance for 90 days QI project was \$550,000 calculated by avoidance of

cost to implement the HFDEP program for 90 days was \$755.00. Each 30-page booklet cost \$7.55, and 100 booklets cost \$755.00. Sustainment of the program will be achieved through the continued use of the standardized HFDEP booklet.

Ethical Considerations

Approval for this QI project was sought from both the institutional review boards of the BMC Research Department (see Appendix G) and University of the Incarnate Word (see Appendix H). The project is a QI activity at the facility where the program was implemented. Therefore, patient informed consent was not required since patient education is considered a standard of care for patients. This QI project did not involve any direct patient intervention other than routine discharge education provided to all patients upon discharge. All data containing patient sensitive information was kept secured, in the locked cabinet, in the student's office. Only the DNP student had access to the computer database. All patient identifiers were removed from the data source to protect individual privacy and to ensure compliance with the Health Insurance Portability and Accountability Act. All staff was informed of the purpose and duration of the project. No data was collected from patients. There are no known or apparent risks associated with QI implementation education.

Data Collection

Data collection focused on: 1) documentation of the discharge education given to the heart failure patients, 2) tracking of discharge teaching material provided to the patients before discharge, and 3) the 30-day readmissions rate on heart failure patients discharged from the Telemetry Unit. There were a total of 86, licensed and unlicensed staff members who participated in the education sessions, and subsequent implementation of discharge education. Also, data on the 30-day readmissions, which was collected 90 days, post program

implementation, at the macro (hospital) level, and then the information was compared with pre-implementation data. This comparison data is available through the organizations Informatics Department.

Measurement

Evaluating outcomes is an important part of implementing EBP at the bedside. Outcomes measure the change in practice. To determine program effectiveness, it was important to collect a baseline measurement, before program implementation, to compare with the post program implementation measurement. A total of 70 heart failure patient's charts on the Telemetry Unit were audited and the demographic information listed below was extracted from patient records along with information related to adherence to AHA discharge education in the Telemetry Unit. A readmission is defined as a hospitalization for any reason within 30 days of discharge from the previous admission date. For patients with multiple readmissions during the 30 day window, only the first readmission was counted. Also, once heart failure patients are discharged, the same patient can be readmitted to other inpatient units; therefore, it was important to review all heart failure admissions to identify Telemetry Unit's patient readmissions. This will count as readmissions for the Telemetry Unit.

- Age.
- Sex/Gender.
- Racial/Ethnic background.
- Admission date.
- Discharge date
- Discharge disposition.
- Admitting service.

- Readmission since last discharge.
- Unit where the patient is admitted (heart failure patients are also admitted to other units).
- Follow-up appointments.
- Comparing total heart failure patients admitted to telemetry admissions rates of 7, 14, 21, and 28 days.
- Documentation of evidence-based heart failure discharge education by licensed staff.
- Documentation of HFDEP booklet given to the patient before discharge.

Data Analysis

All QI data were analyzed using the 2013 version of Microsoft Excel. For descriptive analysis, the DNP student used the Excel database to collect, abstract, aggregate, and analyze the data. Performance indicators were measured and compared with the established benchmarks. The demographics and patient characteristics were used to describe descriptive analysis (see Appendix I). The data base line data was compared with post-intervention data related to patient receiving discharge education and documented in the EMR. Descriptive statistics were used to examine demographic and clinical characteristics in the aggregate. The medical records of the 70 patients admitted to the Telemetry Unit were reviewed for documentation on the patient receiving the evidence-based HFDEP education. All data were aggregated and analyzed. Readmission data for the Telemetry Unit were tracked, using the hospital's retrospective secondary source 90 days post-program implementation, and compared with baseline data.

Evaluation Model for Program Outcomes

After reviewing different evaluation models, the model best suited and selected for program implementation was the Kellogg Logic Model. The Kellogg Evaluation Logic model

was well suited for all phases of program development, from inception to program implementation. This model was easy to use and helpful in creating a step-by-step process of identifying resources, activities, outputs, and outcomes of the program development. The Kellogg model considers both strategies and activities as they relate to the desired results of the program. The logic model contained five components: input, activities, outputs, outcomes, and impact. Each component of the model recognized the needs and requirements essential to follow through until the outcome was achieved (Kellogg Foundation, 2004).

When developing programs, it was crucial to develop an evaluation tool to assess whether a program was feasible. The evaluation process occurred throughout the program phase: planning, implementation, and evaluation. Activities required in the logic model necessitated systematic thinking and allowed the stakeholders to test different options such as whether to make the heart failure video or develop a comprehensive heart failure education booklet for achieving the desired result (Kellogg Foundation, 2004). Program planning for older heart failure patients was a complex issue primarily because it was a multifaceted problem. The DNP student was tasked with program evaluation to ensure the measurement of outcomes and their effect on the patient, as a result of the interventions implemented.

According to Shakman and Rodriguez (2015), evaluation of the program has two purposes: improve and prove. The “improve” aspect is the formative process, or implementation evaluation (see Appendix J). The “prove” aspect of the evaluation is the summative, results, or outcomes evaluations. During the formative phase, the DNP student obtained informal feedback from various stakeholders to improve the program. Throughout the intervention development, various stakeholders provided feedback and based on the comments; the intervention was modified many times. The formative evaluation process was necessary to determine what

worked well and what needed to be changed. The short-term and long-term goals of the intervention must not only be realistic, but must also be smart, measurable, action-oriented, and time-limited. The logic model evaluation determined what was needed and helped in setting priorities. A summative evaluation was conducted to determine whether the intervention worked as it was planned. The intervention was executed as planned without any adjustments other than providing feedback to the Telemetry leadership to ensure the communication remained open throughout the implementation phase (Kellogg Foundation, 2004). Appendix K is a table of the logic model that was used to assess the Activities Approach and Outcomes Approach methods, which fully described the heart failure discharge education program which was based on the 2013 AHA guidelines.

Project Time Line

A part of developing a timely and efficient intervention was to ensure that each activity was assigned an expected date of completion. A project timeline was used to keep track of activities and promote individual accountability. The timeline for program implementation is displayed in Figure 4. There are five significant program milestones: (a) completion of heart failure discharge education program for nursing staff; (b) program implementation; (c) program evaluation; (d) data analysis and quality measures; and (e) DNP project dissemination. The heart meeting dates; therefore, remaining flexible was necessary to ensure successful implementation of the program.

APRN Roles on the Interdisciplinary Team

The Advance Practice Registered Nurse with DNP skills and knowledge has the opportunity to learn about the complex adaptation system impacting health care at all systems levels (micro, meso, and macro) which were interrelated. A DNP has a pivotal role in shaping

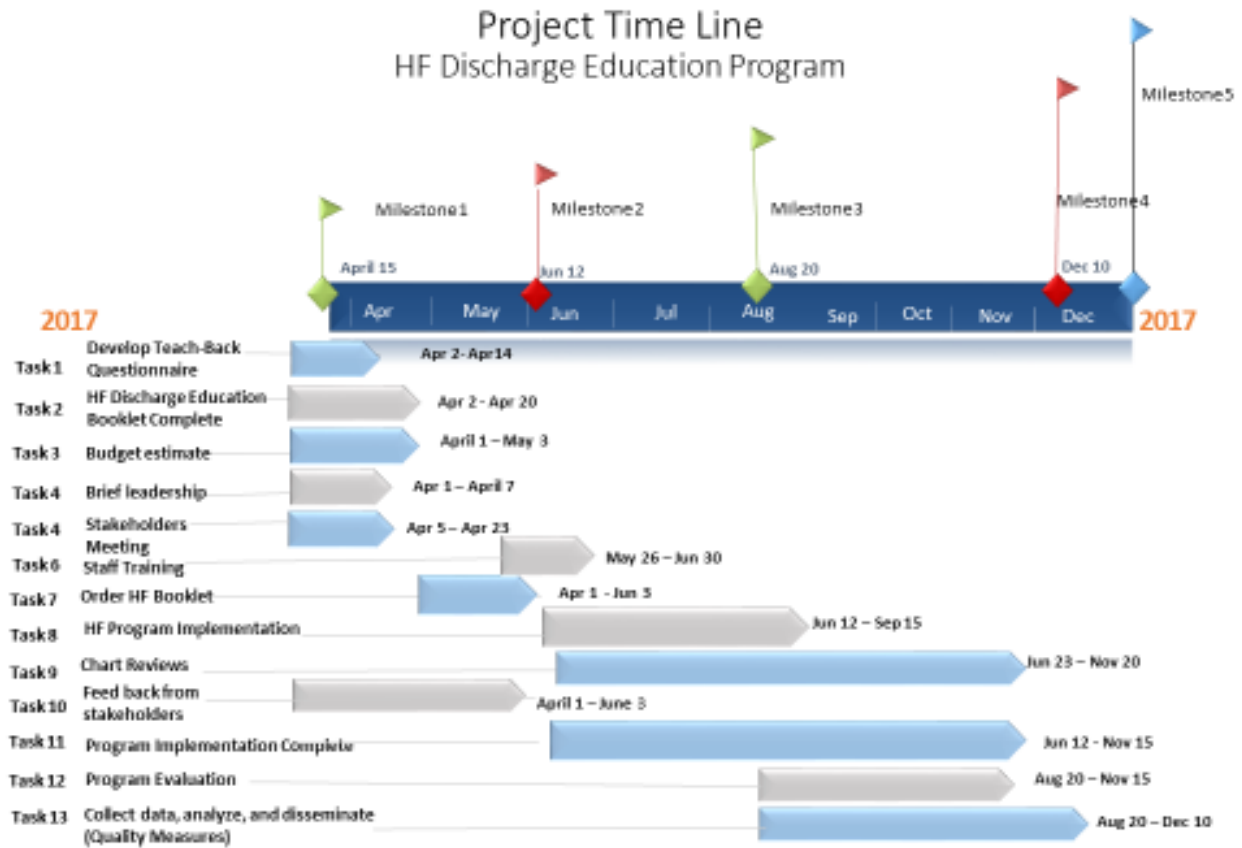


Figure 4. Project time line for Heart Failure Discharge Education Program Implementation.

Milestone 1: Completion of heart failure discharge education Program, Milestone 2: Program implementation, Milestone 3: Program evaluation, Milestone 4: Program analyses and quality measures: Milestone 5, DNP project dissemination.

the future health care system that supports quality and delivery of patient-centered care. As a result of clinical expertise in quality improvement, health policy, and research, the DNP student made a significant contribution to organizational performance. Through experience with QI process, the DNP student was able to hone in on DNP Essentials for the DNP student to learn.

The DNP student worked closely with various interdisciplinary team members to develop the HFDEP project, thereby eliminating the potential for the development of silos.

American Association of College of Nursing's (AACN) DNP Essentials VI focuses on using a collaborative approach to problem-solving. The DNP student facilitated and guided the implementation of the evidence-based QI project. The DNP student served as a change agent for clinical practice and coordinated the comprehensive heart failure discharge education with the organization's interdisciplinary team members. The DNP student identified resources within the organization and mobilized the team to solve system and process issues, with resulting improvement in the quality of care and safety of heart failure patients (Moran et al., 2014). An interdisciplinary team has been helpful because the team was small so sharing knowledge between individual disciplines was feasible. Each interdisciplinary team brought their unique knowledge but also their unique educational backgrounds, experience, values, and roles to the heart failure care process (Zaccagnini, & White, 2014).

Results and Findings

During the 3-month period from June 12, 2017 to September 12, 2017, licensed staff members of the Telemetry Unit implemented an evidence-based heart failure education program, titled Heart Failure Discharge Education Passport booklet, using the teach-back method. The sample size of 85 was established using information from the previously completed needs assessment. However, during the first month of program implementation, the sample size was less than anticipated. Based on organization's historical heart failure admission data, in the summer months, heart failure admissions tends to lower than the fall and winter months. To increase the sample size, the DNP student asked for assistance from the interdisciplinary team members from the Internal Medicine clinic and the bed coordinator supervisor, to admit all heart

failure patients in the Telemetry Unit. During the needs assessment conducted on November 1, 2016, to January 9, 2017, whereby the Telemetry Unit had the highest heart failure admissions 41% (n = 37). In 90 days, a total of 107 heart failure patients were admitted to seven inpatient units. This is an aggregate of total inpatients. Of the seven inpatient units, the Telemetry Unit had the highest admissions for patients diagnosed with heart failure, 46% (n = 49) compared to other inpatient units (see Figure 5). Heart Failure patients admitted to other units did not participate in the QI project since the heart failure discharge education was only designed for the Telemetry Unit.

Gradually, the number increased. During the QI project, 70 charts were reviewed. Of this, 32 patients met the inclusion criteria. Thirty-eight heart failure patients were excluded for various comorbidities and variables. Of the total patient charts reviewed (N = 70), 65 (93%) were admitted from the Emergency Department, four were from in-house transfers, and one was from the out-patient clinic. The Internal Medicine Clinic was responsible for admitting 74% (n = 52) of the patients, cardiology service accounted for 24.6% (n = 17), and orthopedic, 1.4% (n = 1).

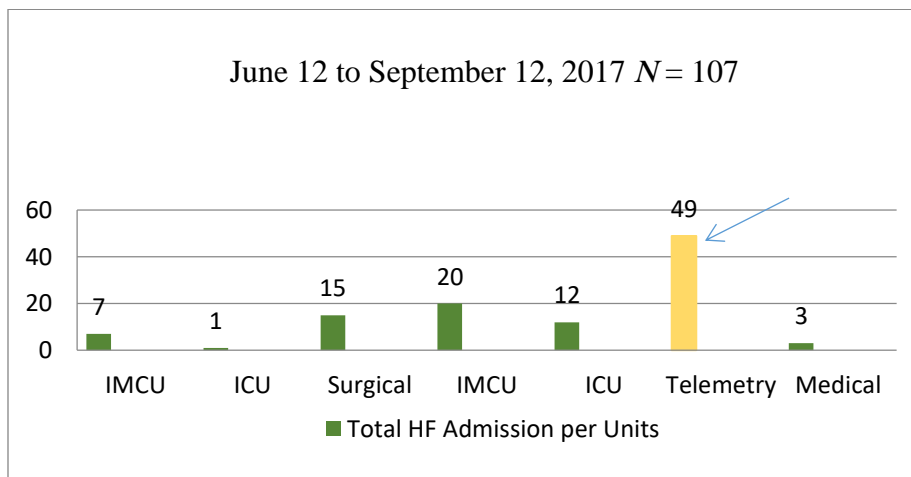


Figure 5. Heart Failure Admission on All In-patient Units. Of the seven inpatient units, the Telemetry Unit had the highest heart failure admissions.

The age range was 20 to 96 years (mean age 76), of which more than 60% (n = 42) were men. The majority of patients were White 60%, (n = 42) and older than 65 years of age (95%), see Table 1.

Table 1

Telemetry Unit Heart Failure Patient Population

Demographic Characteristics Jun 12 to Sep 12, 2017 N=70						
Gender	Male 60% (n = 42)	Female 40% (n = 28)				
Age (mean = 76)	< 54 3	55 - 64 4	65 - 74 19	75 - 84 21	85 - 94 14	95 + 9
Ethnic	White 60% (n = 42)	African American 8.5% (n = 6)	Non - White Hispanic 18.5% (n = 12)	Other 13% (n = 9)		

The average length of stay was 4.1 days; somewhat longer than pre implementation data which was an average length of stay of 3.0. This could indicate that patients may have been are sicker and older, with additional comorbidities. Of all patients, 52 were discharged to home, seven were transferred to a Skilled Nursing Facility, one to an outside facility, seven were transferred to a higher level of care (i.e. Critical Care or Intermediate Care Unit), against medical advice (AMA), and two patients died.

Objective 1

The first program objective was for the Telemetry licensed nursing staff to adhere to use of the evidence-based HFDEP booklet, by attending the education class. A total of 68 licensed nurses attended one of 15 education classes offered by the DNP student, from May 26, 2017 to

June 30, 2017. By June 12, 93% of the staff were trained to implement the QI project by June 12. The training of 68 licensed nursing staff required a concerted effort by the interdisciplinary team members and Telemetry Unit leaders. The other 18 unlicensed staff members received a modified heart failure education, provided by the heart failure champions, to familiarize the QI project for the Telemetry Unit. The Assistant Clinical Head Nurse was instrumental in putting together the schedule and ensuring the staff could take time off to attend the training.

As an heart failure education attendance incentive, 2.25 continuing education units (CEUs) were offered to staff members. Upon completion of the training, attendees were asked to complete the evaluation form to receive the CEUs. The rating options on the evaluation form Likert scale, with 1 being low to 5 being high. Out of 68 participants, the average score on was 5. The pre-implementation staff training goal was 90%; however, 100% was subsequently attained. The positive outcome resulted from well-coordinated efforts from the stakeholders involved in The heart failure program. Results of an informal interview with the staff suggested that they were satisfied with the overall process of providing standardized discharge education.

Objective 2

The second objective of the QI project was for licensed nursing staff adherence in providing evidence-based HFDEP education using the teach-back method and documenting, in the EMR, before heart failure patients discharge to home. With the business plan approved and the delivery of 100 HFDEP booklets to the Telemetry Unit completed, the nursing staff was ready to implement the program. Having teaching material available was helpful for the patients.

A standing order set for heart failure Nursing Initiated Orders was developed and made available in the EMR treatment flow sheet. Nursing initiated orders enabled the nurses to remember to carry out the patient discharge education and provide the HFDEP booklet before

discharge. When the task was completed, nurses are required to sign the treatment sheet. Post-implementation, the nurse initiated the heart failure orders sets over 90% of the time, in comparison to 0% pre-implementation. Even though were initiated, sign off was not always completed by the licensed staff. This is a common findings not only for Nursing Initiated Orders but other nursing documentation requirements due to staff being too busy to go back and sign off nursing care delivered during the shift or too many competing priorities to document in both the medical record and the EMR, compared to the baseline (see table 2). A marked improvement of heart failure discharge education provided and documented in the EMR before patient discharge increased from 0% to 91%. The staff expressed that the HFDEP program was easy to implement.

Table 2

Heart Failure Discharge Education Compliance (June 12, 2017 to September 12, 2017, N = 32)

Implementation of evidence-based American Heart Association guidelines on heart failure discharge education	Before Implementation	After Implementation	Goal
Staff documentation of HFDEP booklet given to the patient before discharge	0%	91%	90%
Staff documentation of heart failure discharge education	0%	91%	90%
Heart failure Nursing Initiated orders used	0%	90%	90%

Note. The goal was set at 90%. The Telemetry Unit met the bench mark in all three indicators.

Objective 3

The third objective was to provide a copy of the HFDEP booklet containing symptom recognition and other helpful information contained in the booklet to the patients upon discharge. The nurse documented the education provided once the nurse completed the discharge education for the patient before discharge. The overall compliance increased from 0% to 91%, meeting the goal of 90%.

Objective 4

The fourth objective was to decrease the 30-day readmissions rate by 12%. Thirty-eight heart failure patients were excluded from the program for various exclusion criteria. One patient, in particular, was excluded for being too sick to receive the education. In this case, the patient has end stage heart failure, along with two metastatic cancers. In a review of the medical records, this patient had over 23 significant comorbidities and was taking 26 different medications. This patient ended up transferring to another unit for palliative care. Over a 30-day period, from June 12, 2017, to September 12, 2017, 28 heart failure patients were readmitted within 30 days of being discharged from the hospital. Of the 28 patients admitted, 50% were readmitted for other than heart failure diagnosis, comorbidities and another diagnosis such as chronic obstructive pulmonary disease, syncope, chest pain, hypertension, and falls. The other 50% (n = 14) patients were diagnosed with heart failure, and readmitted within 30 days, and two of those patients were Telemetry Unit readmissions

Discussion

Of the 32 patients who met the inclusion criteria and received the heart failure discharge

education, two patients who received the heart failure discharge education were readmitted within 30 days. The readmissions occurred less than 30 days, 8 and 14 days, respectively from the date of discharge from the hospital.

The 3-month, evidence-based QI project standardized the discharge education for the heart failure patients and resulted in positive changes in their discharge education. Also, as a consequence of the nursing staff providing the heart failure discharge education, using the teach-back method, documenting it in the EMR, the project goals were achieved. The data showed that there has been a decrease in repeat readmission of heart failure patients in the Telemetry Unit. The organization 30-day readmission rates have been 30% for the past 4 years. The Telemetry Unit's 30-day readmission rate of 6.25% is less than the national benchmark of 24% to 27%.

The evidence-based QI program implementation exposed the patient to information about heart failure symptoms which may help them take action to avoid frequent readmissions. Also, this program emphasized the importance of having a follow-up-appointment before discharge, daily weights, medication, dietary adjustments, and lifestyle changes. The study by Vreeland et al. (2011) suggests that nurses desire to provide quality discharge education; however, due to knowledge gaps and other barriers, educating patients gets left out. A timely and efficient discharge process is important for a patient's ability to manage symptoms and adherence to self-care management. The evidence-based QI project data revealed the following: (a) there was an increase in licensed staff adherence to 2013 AHA guidelines in providing discharge education, (b) nurses activating the Nursing Initiated Orders in the EMRs increased, (c) documentation of the HFDEP education provided in the EMR increased, (d) and repeat readmission, by the same patients, decrease once discharged from the Telemetry Unit.

The Telemetry staff was excited about using the HFDEP booklet to educate the patient. However, after a few weeks of program implementation, the DNP student became aware that some staff members were not following the program implementation guidelines. Instead of showing the patient how to use the heart failure diary, some staff members gave the heart failure booklet to the patient without review. It was important for the nursing staff to show the patient how to use the diary in the HFDEP booklet and recognize symptoms using the three color zones. During the QI implementation, deficiencies were identified and communicated to the leaders of the Telemetry Unit. Remediation was focused on using the teach-back methods, using the HFDEP booklet, and appropriate use of when soliciting a patient response from the patient. A similar observation was noted by Mahramus et al. (2014) in which a significant amount of time was spent on the teach-back method to ensure the patient understood the heart failure education material. While teaching the patient, it became apparent that nurses needed remediation on the teach-back method. When the patient could not recall the information, it was important to adhere to the teaching technique to ensure that the patient was not made to feel inadequate. Teach-back method requires the nurse to position comfortably next to the patient when asking the patient to teach-back what they learned. Teach-back seems simple but for some nurses, finding the right phrase to pose the question, needed some practice. Rasmusson et al. (2015) agreed that heart failure patients have better outcomes when the healthcare providers encourage the patient to participate in their care by taking part in the learning process.

Having teaching material was helpful for the patient once discharged. This is supported by Mahramus et al. (2014) who also found that patients prefer to learn from healthcare providers who offer resources that the patient can keep and refer to, to refresh learning. Despite staff

apprehension about not having enough time to teach, the staff thought the heart failure booklet was easy to use and saved time. Before program implementation, the nursing staff reviews the discharge summary for 15 to 20 minutes going over the discharge summary. However, by having the material readily available, heart failure discharge education took 30 minutes. As cited by Peter et al. (2015), they too found the teach-back method to be simple and easy to implement. However, there was no association between patients correctly answering heart failure teach-back questions and 30-day readmission rates.

Lack of time to document was of great concern to the staff. The study by Peter et al. (2015) serves as an exemplar to document of teaching, using the teach-back method and entering that information into the progress note in the interdisciplinary EMR. Also, they used a heart failure order set to trigger a timed entry note.

Implications and Lessons Learned

Implementing the evidence-based HFDEP has an important implication for the organization and the patient. With healthcare becoming more complex and with escalating costs, the individual patient must be taught how to self-manage their heart failure symptoms. Once the patient can recognize early heart failure symptoms, they can take action to mitigate future readmissions. The teach-back method allowed the nurse to evaluate the patients' understanding of the material taught before discharge, which improved their self-care management ability once discharged to home (Peter et al., 2015). Not all readmissions can be avoided and can occur quickly before the patient has a follow-up appointment. For instance, the two patients readmitted did not have a follow-up appointment, and they were readmitted within 8 and 14 days from the discharge date. The implication of this is that it is crucial that a follow-up appointment is offered

to the patient within 7 days from the discharge date, especially since the patients are readmitted less than 30 days; hence, avoid readmissions.

Lessons learned. The DNP student learned several lessons while conducting this DNP project. The first lesson was the importance of leaders being involved from the start to obtain the support needed to get the project implemented on time. The second lesson learned was to maintain communication with the stakeholders. The third lesson was to increase the sample size due to the unanticipated decrease in census during the summer months. The DNP student contacted the Chief of Internal Medicine, the Chief of Internal Medicine Resident, and the bed coordinator supervisor to increase the sample size. According to them, typically heart failure admissions are lower during the summer months, but admissions increase in the fall. Chart review shows that many heart failure patients are admitted for volume overload and unmanaged heart failure symptoms. Similar findings presented by Houston, Kalathiya, Kim, & Zakaria (2015) showed that many heart failure patients tend to become volume overloaded during the holiday season because of higher salt intake and not watching their dietary intake, which resulted in increased numbers of heart failure admissions. The final lesson learned was that working with stakeholders was challenging at times, due to individual biases and personal agendas, but through mutual support and respect for each professional's skills, knowledge, and talents, it was possible to develop a good HFDEP. Heart failure is a complex disease requiring an interdisciplinary approach. Even though there were setbacks during the program implementation, it was invaluable to work with these interdisciplinary team members, gaining their feedback and buy-in to make the program successful.

Strengths and Limitations of Project

The primary strength of this QI project was the collaboration among interdisciplinary

team members during implementation. Using the logic model as a guide was helpful in managing the time line and evaluating program effectiveness. The most significant outcome was the adherence to 2013 AHA guidelines in delivering the standardized, evidence-based discharge education program by the licensed nursing staff. The strength of the program was characterized by the good teamwork and positive attitudes from members of the Telemetry Unit. This program was successful because of strong support from the senior leadership and interdisciplinary team members who provided constructive feedback during program implementation. Moreover, additional strengths of the program were the support received from the organization to supply the teaching material; the program implementation cost-effectiveness, resulting from the ability to print the HFDEP booklets at the organization where the QI project was implemented; and the sustainability of the program. The DNP student developed a program budget, and the Chief Nursing Officer approved the printing of 100 booklets in time for program implementation.

Limitations. There were several limitations identified in this QI project. One overarching limitation was that there was no control over which unit heart failure patients were admitted. The QI project was limited to one inpatient unit instead of all inpatient units. None of the wards/units have a standardized discharge patient education. Because heart failure patients are admitted to other units, it was difficult to know if HFDEP was effective in decreasing 30-readmissions. As mentioned previously, an unanticipated seasonal fluctuation in the hospitalization of heart failure patients exists. The assessment audit was conducted during the summer months when heart failure patient admissions were low. A larger sample size may have changed project results. The sample size of 85 was selected based on aggregate hospital heart failure admissions data from November 1, 2016, to January 9, 2017. At that time, the Telemetry Unit had the highest admission of 37 (41%) compared to other inpatient units. Compared to previous needs

assessment, heart failure admissions data from June 12 to September 12, 2017, showed the Telemetry Unit had the highest admission of 49 (45%). This is 4% higher than previous data from needs assessment. The effort made by the providers to place heart failure patients to the Telemetry Unit was noted. The sample size was a convenience sample which may have resulted in a selection bias. Another limitation was identified in the challenges to keep track of the patients who received the heart failure discharge education. Once the patient is discharged to home, it was challenging to know if the patient used the booklet during the follow-up appointment. The Telemetry Unit's Clinical Head Nurse was not engaged with the heart failure implementation because of other competing priorities. A lack of Telemetry Unit leadership engagement was a big barrier to the program. Many nurses have less than 5 years of clinical experience. Prioritizing tasks requires critical thinking skills.

Recommendations for Program Sustainability

The Telemetry Unit has a standardized, evidence-based heart failure education program and an institutional support system in place which facilitates program sustainability. Integration of clinical practice recommendations into daily practice was accomplished through electronic Nursing Initiated orders, in the EMR, which provides the nursing staff an additional reminder about the intervention. If the nursing staff forgets to initiate the Nursing Initiated Orders, the Charge Nurse will activate and remind the nursing staff to do so, to ensure appropriate heart failure education is completed and documented in the EMR. Organization leaders are committed to supporting the continuation of the heart failure training program. However, the Telemetry staff and administration need to make the program operational.

The Telemetry staff and leadership are also responsible for the program. The duties of the Charge Nurse are crucial to the sustainability of the project. Each day, the Charge Nurse will

review all heart failure admissions and will conduct daily heart failure audits using the patient records in the EMR. The Charge Nurse will then communicate deficiencies to the primary nurse taking care of the heart failure patient. Furthermore, reporting the heart failure data to senior leaders will make the unit accountable. The Charge Nurse and the heart failure champions are responsible for ongoing staff training, during employee orientation. The DNP student created two heart failure bookbinders with all training materials and instructions on how to use the training binder. To promote program sustainability, the DNP student strongly recommends that the Telemetry Unit leader communicate the need for continuation of the program. The Telemetry staff can train the other two inpatient units on heart failure discharge education as they have to have a bigger impact on heart failure patients discharge education before considering implementing the program hospital-wide.

The Telemetry Unit has significant staff turnover, as well as high patient turbulence. Implementing new program is not always accepted, and staff buy-in will be important for the program to be sustained. Healthcare, in the 21st-century, can daunt the most progressive and experienced leader. In today's rapidly changing environment, managers need insight and strategies. These fundamental principles are transparency, responsiveness, readiness, adaptation, voice, and sustainment (Kaminski, 2011). According to Kaminski (2011), one of the most powerful ways a leader can initiate change is to be transparent with their staff. A skilled leader from their employees. Before making changes, the leader must know when the people are ready knows how to tap into the strengths of the employees to ignite a sense of urgency, and get buy-in from their employees. Before making changes, the leader must know when the people are ready for a change. If the staff is not ready for change, resistance will be met. The DNP student provided enough resources and support to the Telemetry Unit to prepare for change. The licensed

staff feels comfortable about sharing any concerns, questions, confusion, and ideas about the new QI project. Also, they were encouraged to communicate openly and provided feedback to improve the program. Most importantly, the nurses are empowered, and feel supported and heard (Kaminski, 2011). The Telemetry Unit has gone through all stages of change and has accepted the change. Hence, utilization of the HFDEP program has become the standard method for discharge education (Sutherland, 2013).

Relevance of Nursing Practice for APRN with DNP

The APRN with DNP degree possesses the advanced scientific knowledge to develop specific programs addressing complex health care issues, in a variety of health care settings. The DNP Essentials address the specific core competencies necessary for APRNs to practice at the advanced practice in nursing level (AACN, 2006). The AACN Essentials of practice guide the DNP specialty nurse to focus on improving the health care of older heart failure patients, in an acute care

Senior leaders of the nursing staff and the organization must see a return on investment for this QI project, to achieve project sustainment. Heart failure champions will provide on-going heart failure education to new nursing staff. Also, it is important to continue using the heart failure Nursing Initiated Orders in the EMR. Furthermore, the Telemetry Clinical Head Nurse will take the overall responsibility of program sustainment by making the staff accountable. The DNP project has offered opportunities to explore DNP Essentials and develop competence in these highly complex areas of practice. The DNP experience enabled the DNP student to translate the research into EBP, and implement it at the bedside. The DNP student was able to accomplish this by effectively communicating and working closely with inter-professional members to influence the culture of safety within the organization (AACN, 2006). System

thinking benefited the organization by examining complex issues from multiple perspectives and solving problems from a holistic viewpoint. Instilling the idea of personal mastery in all employees promoted shared vision, which is a powerful concept influencing change. DNP Essential III addresses the research background as well as quality improvement knowledge to identify the most current EBP to implement and improve patient outcomes. In this project, the DNP student provided clear direction and leadership to the Telemetry Unit by efficiently collaborating with a multidisciplinary team in the development of the HFDEP booklet.

Monitoring implementation of EBP is discussed in DNP Essential III and was a significant part of the program development and implementation. Throughout program formulation and implementation, time was spent communicating with different stakeholders and unit leadership to ensure the heart failure program was implemented successfully. The interprofessional collaboration was crucial in improving healthcare outcomes. Essential IV addresses the utilization of information systems to evaluate programs of care, outcomes of care, and evaluate systems of care.

The DNP Essential VI emphasizes the importance of interprofessional collaboration to achieve clinical outcomes and program goals. The DNP student gained knowledge on how to effectively communicate with the organizational leadership and stakeholders who could provide the support needed to implement the QI project successfully (AACN, 2006). The DNP VIII Essential guides the DNP graduate to practice in the area of clinical expertise and is a hallmark of the DNP. The DNP student conducted a comprehensive and systems assessment to identify gaps in the older heart failure patient population.

Conclusions

Today's complex healthcare system requires the nurses to use effective teaching

strategies to educate patients. The Telemetry nursing staff successfully implemented the heart failure discharge education, based on the 2013 AHA guidelines. Implementing the evidence-based, discharge education has significant implications for the organization and the patients. The QI project led to a marked improvement in staff adherence to using the teach-back methods to educate the heart failure patients. Furthermore, by implementing the discharge education at the bedside, the highest quality of nursing care is being promoted. Based on patient-centered care, it is the responsibility of nurses to identify a patient's needs and individualize the care. The DNP student worked closely with the organization's stakeholders to develop a QI project that is feasible, cost-effective, sustainable, and easily implemented at the bedside. Many healthcare organizations have tried different strategies to reduce 30-day readmissions; however, not much progress has been made. Self-care is an essential component of heart failure management. Once the patient is discharged from the hospital, the patient must be able to perform self-care by following the discharge instructions and medical regimens. The utilization of evidence-based education to deliver standardized patient education has earned the support of stakeholders and organizational leaders. This support will aid the expansion of the program beyond the Telemetry Unit.

References

- Alpert, C. M., Smith, M. A., Hummel, S. L., & Hummel, E. K. (2017). Symptom burden in heart failure: Assessment, impact on outcomes, and management. *Heart Failure Review*, 22, 25-39. doi: 10.1007/s10741-016-958-4
- American Association of Colleges of Nursing. (2006). The essentials of doctoral education for advanced nursing practice. Retrieved from <http://www.aacn.nche.edu/publications/position/DNPEssentials.pdf>
- American Heart Association. (2016). *Get with the heart failure guidelines* [Fact Sheet]. Retrieved from http://www.heart.org/HEARTORG/Professional/GetWithTheGuidelines/GetWithTheGuidelines-heart-failure/Get-With-The-Guidelines-Heart-Failure_UCM_306087_SubHomePage.jsp
- Blauer, C., Frei, I. A., Schnepf, W., & Spirig, R. (2015). Implementation of a nurse-led education programme for chronic heart failure patients during hospitalization, and strategies supporting their self-management at home: A practice development project in the context of the Swiss healthcare system. *International Practice Development Journal*, 5, 1-15
- Boyde, M., Peters, R., Hwang, R., Korczyk, D., Ha, T., & New, N. (2016). The self-care educational intervention for patients with heart failure: A study protocol. *Journal of Cardiovascular Nursing*, 32(2), 1-6.
- Boyde, M., Song, S., Peters, R., Turner, C., Thompson, D. R., & Stewart, S. (2012). Pilot testing of a self-care education intervention for patients with heart failure. *European Journal of Cardiovascular Nursing*, 12, 40-46. Retrieved from

[http://dx.doi.org/ 10.1177/1474515111430881](http://dx.doi.org/10.1177/1474515111430881) EVIDENCED-BASED DISCHARGE
EDUCATION INTERVENTION

- Burke, R. E., Guo, R., Prochazka, A. V., & Misky, G. J. (2014). Identifying keys to success in reducing readmissions using the ideal transitions in care framework. *Health Services Research, 14*, 1-10. Retrieved from <https://doi.org/10.1186/1472-6963-14-423>
- Butler, J. (2012). Primary prevention of heart failure. *International Scholarly Research Network Cardiology, 2010*, 1-15, retrieved from <http://dx.doi.org/10.54022012/982417>on
- Centers for Disease Control and Prevention. (2016). *Heart Failure Fact Sheet*. Retrieved from https://www.cdc.gov/dhdsdp/data_statistics/fact_sheets/fs_heart_failure.htm
- Chaffee, M. W., & McNeil, M. M. (2007). A model of nursing as a complex adaptive system. *Nurse Outlook, 55*, 232-241. doi: 10.1016/j.outlook.2007.04.003
- Collins, S. A., Fred, M., Wilcox, L., & Vawdrey, D. K. (2012). Workarounds used by nurses to overcome design constraints of electronic health records. *Nursing Informatics, 2012*, 1-6, Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3799185/>
- Davis, K. K., Mintzer, M., Dennison Himmelfarb, C. R., Hayat, M. J., Rotman, S., & Allen, J. (2012). Targeted intervention improves knowledge but not self-care or readmissions in heart failure patients with mild cognitive impairment. *European Journal of Heart Failure, 14*. Retrieved from <http://dx.doi.org/10.1093/eurjh/hfs096>
- Feltner, C., Jones, C. D., Cene, C. W., Zheng, Z., Sueta, C. A., & Jonas, D. E. (2014). Transitional care interventions to prevent readmissions for persons with heart failure. *Annals of Internal Medicine, 160*(11), 774-784. Retrieved from www.annals.org

- Houston, B. A., Kalathiya, R. J., Kim, D. A., & Zakaria, S. (2015). Volume overload in heart failure: An evidence-based review of strategies for treatment and prevention. *Mayo Clinic Proceedings*, 90(9), 1247-1261.
- Jones, B. R. (2017). Chronic heart failure part 1: Pathophysiology, signs and symptoms. *Nursing Standard*, 31, 54-60. doi: 10.7748/ns.2017.e10349
- Kaminski, J. (2011). *Key principles of 21st century change management. Transforming Health through IT*. Retrieved from <http://www.himss.org/news/key-principles-21st-century-change-management>
- Kellogg Foundation, W. K. (2004). *Using logic models to bring together planning, evaluation, and action: Logic model development guide*. Retrieved from <https://www.bttop.org/sites/default/files/public/W.K.%20Kellogg%20LogicModel.pdf>
- Koberich, S. (2016). Fostering self-care behaviors through symptom diary use? An exploratory, cross-sectional study about the use of and attitude towards a symptom diary of patients with heart failure. *Journal of Research in Nursing*, 2, 531-541. Retrieved from <http://dx.doi.org/10.1177/1744987116674256>
- Kociol, R. D., Peterson, E. D., Hammill, B. G., Flynn, K. E., Heidenreich, P. A., Pina, I. L., ... Hernandez, A. F. (2012). National survey of hospital strategies to reduce heart failure readmissions: Findings from the get with the guidelines-heart failure registry. *Circulation Heart Failure*, 5, 680-687. Retrieved from <http://dx.doi.org/10.1161/CIRCHEARTFAILURE.112.967406>
- Lindberg, C., Nash, S., & Lindberg, C. (2008). *On the edge: Nursing in the age of complexity*. Bordentown, NJ: Plexus Institute.
- Mahramus, T., Penoyer, D. A., Frewin, S., Chamberlain, L., Wilson, D., & Sole, M. L. (2014). Assessment of an educational intervention on nurses' knowledge and retention of heart

- failure self-care principles and the teach-back method. *Heart & Lung*, 43, 204-212.
Retrieved from <http://dx.doi.org/doi.org/10.1016/j.hrting.2013.11012>
- McEwen, M., & Wills, E. M. (2014). *Theoretical basis for nursing* (4th ed). Philadelphia, PA: Lippincott Williams & Wilkins.
- Melnyk, B. M. & Fineout-Overholt, E. (2013). *Evidence-based practice in nursing & health care: A guide to best practice* (3rd ed). Philadelphia, PA: Lippincott Williams & Wilkins.
- Messina, W. (2016). Decreasing congestive heart failure readmission rates within 30 days the Tampa VA. *Nurse Administration Quarterly*, 40(2), 146-152. Retrieved from <https://www.docphin.com/research/article-detail/18329273/PubMedID-26938187/Decreasing-Congestive-Heart-Failure-Readmission-Rates-Within-30-Days-at-the-Tampa-VA>
- Moran, K., Burson, R., & Conrad, D. (2014). *The Doctor of Nursing Practice scholarly project: A framework for success*. Burlington, Maine: Jones & Bartlett Learning.
- Peter, D., Robinson, P., Jordan, M., Lawrence, S., Casey, K., & Salas-Lopez, D. (2015). Reducing readmissions using teach-back enhancing patient and family education. *Journal of Nursing Administration*, 45, 35-42. Retrieved from <http://dx.doi.org/10.1097/NNA.0000000000000155>
- Rasmusson, K., Flattery, M., & Baas, L. S. (2015). American Association of Heart Failure Nurses position paper on educating patients with heart failure. *Heart & Lung*, 44, 173-177. Retrieved from <http://dx.doi.org/dog/10.1016/j.hrting.2015.01.001>
- Re-engineered discharge cuts readmissions. (2012). *Hospital Case Management*, 20(5), 70-75. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/22570873>

- Regalbuto, R., Maurer, M. S., Chapel, D., Mendez, J., & Shaffer, J. A. (2014). Joint Commission requirements for discharge instructions in patients with heart failure: Is understanding important for preventing readmissions? *Journal of Cardiac Failure, 20*, 641-649.
<http://dx.doi.org/http://dx.doi.org/10.1016/j.cardfail.2014.06.358>
- Ross, A., Ohlsson, U., Blomberg, K., & Gustafsson, M. (2015). Evaluation of an intervention to individualise patient education at a nurse-led heart failure clinic: A mixed-method study. *Journal of Clinical Nursing, 24*, 1594-1602. doi:10.1111/jocn.12760
- Ruppar, T. M., Cooper, P. S., Mehr, D. R., Delgado, J. M., & Dunbar-Jacob, J. M. (2016). Medication adherence interventions improve heart failure mortality and readmission rates: Systematic review and meta-analysis of controlled trials. *Journal of the American Heart Association, 5*. 1-19. Retrieved from
<http://jaha.ahajournals.org/content/ahaoa/5/6/e002606.full.pdf>
- Schell, W. (2014). A review: Discharge navigation and its effect on heart failure readmissions. *Professional Case Managers, 19*, 234-234. Retrieved from
<http://dx.doi.org/10.1097/NCM.0000000000000040>
- Shakman, K., & Rodriguez, S. M. (2015). Logic models for program design, implementation, and evaluation: Workshop toolkit. *Institute of Education Sciences*, 1-47. Retrieved from
<http://files.eric.ed.gov/fulltext/ED556231.pdf>
- Texas Health Care Information Collection. (2012). *Heart failure: Risk-adjusted mortality rate, 2012*. Retrieved from https://www.cdc.gov/nchs/pressroom/states/tx_2014.pdf
- The Joint Commission. (2016). *The Joint Commission*. Retrieved from
<http://www.jointcomission.org>

- Thomas, C. M., Kellgren, M. (2017). Benner's novice to expert model: An application for simulation facilitators. *Nursing Science Quarterly*, 3, 227-234. doi: 10.1177/0894318417708410
- Vreeland, D. G., Rea, R. E., & Montgomery, L. L. (2011). A review of the literature on heart failure and discharge education. *Critical Care Nursing Quarterly*, 34, 235-245. Retrieved from <http://dx.doi.org/10.1097/CNQ.0b013e31821ffe5d>
- White, M., Garbez, R., Carroll, M., Brinker, E., & Howie-Esquivel, J. (2013). Is "teach-back" associated with knowledge retention and hospital readmission in hospitalized heart failure patients? *Journal of Cardiovascular Nursing*, 28, 137-146. Retrieved from <http://dx.doi.org/10.1097/jcn.0b013e31824987bd>
- Yancy, C. W., Jessup, M., Bozkurt, B., Butler, J., Casey, D. E., Drazner, M. H... Wilkoff, B. L. (2013). 2013 ACCF/AHA guideline for the management of heart failure: A report of the American College of Cardiology Foundation/American Heart Association task force on practice guidelines. *Journal of American College of Cardiology*, 128, e240-e319. Retrieved from <http://dx.doi.org/10.1161/CIR.0b013e31829e8776>
- Zaccagnini, M. E., & White E. W. (2017). *The doctor of nursing practice essentials: A new model for advanced practice nursing* (3rd ed). Burlington, MA: Jones and Bartlett Learning

Appendix A: Heart Failure Education Program Class Agenda

Friday, May 26, 2017

Objectives:

- The participants will demonstrate how to use the teach-back methods to teach heart failure patient by the end of the class session.
- The participants will identify three heart failure color zones and symptoms associated with each zone by the end of the class session.
- The participants will return demonstrate how to use the HFDEP booklet to educate the heart failure patient by 12 June 2017.
- The participants will identify six core topics that are critical to heart failure discharge education by the end of the class session.
- The participants will successfully implement the HFDEP program by 12 June 2017.
- The participants will explain the overall HFDEP program is to teach the patient symptom recognition and self-care management behaviors to reduce the frequent hospital readmissions by the end of class session.

Time	Topic	Description
8:15 am to 8:30 am	Welcome and Heart Failure Discharge Education Passport (HFDEP) Overview Speaker: DNP Student, Unit Leadership Resource: Computer, Power-point teaching slides, Smart Board, Copies of HFDEP booklets	Overview of heart failure Project Implementation. Evidence-based discharge program developed based on 2013 AHA CPG
8:30 am to 8:50 am	Presentation: Heart Failure Baseline Data Speaker: DNP Student	Review heart failure baseline data on age, ethnic background, disposition, admitting service, where heart failure patients are admitted, follow-up appointments, 30 day readmission rate, heart failure discharge education and documentation.
8:50 am to 9:00 am	Break	
9:00 am to 9:10 am	Presentation: Teach-Back Speaker: DNP Student	Provide examples of teach-back questionnaires to teach the patients and questions for the patients to teach-back to the staff knowledge they gained.
9:10 am to 9:30 am	Presentation: Go over the contents of the HFDEP booklet. Speaker: DNP Student	<ul style="list-style-type: none"> • Follow-up appoints • What is heart failure? • Three heart failure zones (green, yellow, red) • Heart failure warning symptoms • Heart failure medications/medication log • Nutrition, Fluid, Salt, daily fluid log • Daily weight, B/P, HR log • Physical Activity/Activity log • AHA Heart failure education resource website
9:30 am to 10:30 am	Presentation: Scenario based demonstration of teach-back methods and HFDEP booklet. Speaker: DNP Student, 3W staff heart failure Subject Matter Experts (SMEs)	Scenario based education of heart failure patient with a nurse demonstrating step-by-step how to use the teach-back questionnaires. The nurse will go over each page of the HFDEP booklet and explain how to teach the patient to teach-back what they learned. Emphasis will be to educate the patients to use the booklet and carry this passport with them at all times and to PCM appointment.
10:30 am to 11:45	Presentation: Conclusion of the program Questions and Answer Session Speaker: DNP Student	

Appendix B: Staff Training Sign-In Roster

Topic: Implementation of evidence-based heart failure Discharge Education Program

Purpose: The purpose of the training is to discuss program implementation timeline and Quality Improvement Project in Telemetry unit. Staff will acquire knowledge on teach-back strategies used to educate the patient on the use of Heart Failure Discharge Education Passport (HFDEP). The emphases will be heart failure symptom recognition and six core areas of topics (self-care for symptoms, medication, nutrition, exercise, follow-up appointment, and daily weights). The outcome of the training is to ensure Telemetry staff can successfully implement the QI project by educating the discharge education using the HDEDP booklet and document the training in the patient’s EMR. All participants will be offered 2.25 CEUs for attending the Discharge Education program.

PRINT FIRST, LAST NAME	DATE	PHONE NUMBER	SIGNATURE

Appendix C: Teach-Back Methods

Heart Failure Teach-Back Questionnaires for the Nurses Sample questions and scripting suggestions (Keep open ended questions as much as possible; maintaining patient centeredness; include family or care givers in patient discharge education)

Questions nurses would ask the patient

1. What is your salt take limit per day?
2. How many cups of water are you allowed to drink per day?
3. How many times per week do you eat out?
4. What food contains high salt that you should avoid?
5. What are your symptoms of heart failure?
6. What zone are you in if you are feeling no shortness of breath and able to do your normal activity?
7. What should you do if you are a red zone?
8. What should you do if you gained 3 pounds in a day or 5 pounds or more in a week?
9. What is your name of your water pill?
10. What is your name of your blood pressure pill?
11. Why is it important to weigh yourself daily?
12. What are the ways can you cut down on salt intake from your diet?
13. What are two signs and symptoms that you should be watching for signs of heart failure?
14. What are ways that you can to decrease swelling to your lower legs?
15. Why is it important to take medications as prescribed by the doctor?

Patient Teach Back

1. I should only take _____ salt per day
2. I can only take total of _____ glass of water per day
3. I eat out only _____ per week
4. I know what kind of food I need to avoid that contains high salt content _____
5. My symptoms of heart failure are _____
6. My zone is _____ when I feel no shortness of breath and able to do my normal activity.
7. If my zone is red, I would call _____
8. If I gain 3 pounds in a day, I would call _____
9. The name of my water pill is _____
10. The name of my blood pressure pill is _____
11. I will weigh myself daily at the same time. I will call my doctor if _____
12. The way I can cut out salt is by _____
13. My two signs and symptoms of heart failure is _____
14. I can decrease my swelling on my legs are _____
15. I will take all medications as directed. Medication tips include _____

Appendix D: Continuing Nursing Education ANC-CHEP Evaluation Tool

Title of Educational Activity “Evidence-Based Heart Failure Discharge Education Program: Strategies for decreasing 30-day Hospital Readmissions “.

Date: _____ 2017

ANC-CHEP ____AR17-0508

Purpose: (Purpose statement must match that from the 5 Column Outline verbatim, cut and paste and place here) Note. Total inclusion and external criteria for patients selected for heart failure education.

After attending this presentation, rate your ability to perform the objectives listed below:	Low	High
1. Discuss prevalence of Heart Failure in the United States.	1 2 3 4 5	
2. Discuss common causes of Heart Failure.	1 2 3 4 5	
3. Identify difference between right-side and left-side Heart Failure	1 2 3 4 5	

4. Differentiate between Heart Failure Reduced Ejection Fraction (HFrEF) and Heart Failure Preserved Ejection Fraction (HFpEF)	1 2 3 4 5
5. Identify gaps in the current discharge education process.	1 2 3 4 5
6. Discuss the purpose of evidence-based Heart Failure Discharge intervention program to reduce 30-day readmissions	1 2 3 4 5
7. Identify six core topics that are critical to Heart Failure discharge education.	1 2 3 4 5
8. Demonstrate teach-back and motivational interviewing techniques to promote self-care behaviors.	1 2 3 4 5
9. Identify three Heart Failure zones and symptom associated with each zone.	1 2 3 4 5
10. Demonstrate how to use the Heart Failure Discharge Education Passport using the scenario	1 2 3 4 5

II. The objectives clearly related to the purpose/goals of the activity. 1 2 3 4 5

III. Learner’s achievement of each objective was met (If not, comment at the bottom) 1 2 3 4 5

IV. Rate each presenter and content on a scale of 1 (low) to 5 (high) for each item:

Presenter’s Name: (Use one Presenter Name box per speaker)	Low	High
Speaker name:		
Presenter was knowledgeable on the topic.	1 2 3 4 5	
Presenter had an effective presentation style.	1 2 3 4 5	
Content was relevant to the objectives.	1 2 3 4 5	
Teaching strategies were appropriate.	1 2 3 4 5	

Appendix D – Continued

Teaching strategies were effective.	1 2 3 4 5	
Presenter’s Name: (Use one Presenter Name box per speaker)	Low	High
Speaker name:		
Presenter was knowledgeable on the topic.	1 2 3 4 5	
Presenter had an effective presentation style.	1 2 3 4 5	
Content was relevant to the objectives.	1 2 3 4 5	
Teaching strategies were appropriate.	1 2 3 4 5	
Teaching strategies were effective.	1 2 3 4 5	

V. List at least one class that you believe you **NEED** and one class you would **LIKE** to attend:

NEED a. _____
LIKE b. _____

VI. COMMENTS: _____

Speaker Names:

- DNP Student
- PI Consultants
- PI Consultant
- CNS

Appendix E: Heart Failure Education Program Contents

Heart Failure Education Program Contents

Title: Heart Failure Discharge Education Passport
 MY HEART BOOK

REMEMBER
 TO TAKE THIS WITH YOU TO ALL YOUR DOCTOR VISITS



Follow-up Appoints	Contains clinic/location, physician name, appointment date, appointment time Also has different clinic phone number for the patient to call.
What is heart failure	Describes types of heart failure & pathophysiology
Heart Failure Zones	What patient should do each day, all clear for green, caution for yellow, and emergency for red? Teaches patient symptom recognition and actions to take to prevent emergency visit. The focus is knowing what to do in the yellow zone.

Warning symptoms to watch for	Teaches patients to watch for yellow zone such symptoms as shortness breath, chronic coughing, swelling to abdomen and legs, fatigue, confusion high heart rate. This is a yellow zone that patient know to call the doctor.
My medications	Contains log with name of the medication, what the medication is for, dose, remember when to take medication, what time to take, and refill reminder log.
Common heart failure medications	Describes different medications and examples and how medications work.
Nutrition	Describes healthy heart diet, fluid and salt limit, types of food to avoid, how to read food label. Picture of how 2L of fluid and 2 mg of salt.
Daily log	Daily log of weight, blood pressure, heart rate. Patient will write down their own weight goal, B/P goal, and HR goal and as they write down each day, they can compare daily diary with their personal goal.
Physical Activity	Helpful tips on types of activity the patient can do safely and daily log to document their activity level and how they feel with activity.
Cardiac Rehabilitation	Information for patients to ask the physician for cardiac rehab and importance of cardiac rehab in helping hearty heart.
Avoiding Flu and Pneumonia	Information important for patients to get a yearly flu and one-time pneumococcal vaccine.
AHA link resource	This website offers comprehensive interactive patient education.

Note. Content subjects contained in the Heart Failure Discharge Education Passport Content Material. The booklet contains six core areas adopted from 2013 AHA Guidelines.

Appendix F: Heart Failure Zones

WHICH HEART FAILURE ZONE ARE YOU IN TODAY?



EVERY DAY

EVERYDAY: IMPORTANT IN MAINTAINING HEALTHY HEART

- Weigh yourself in the morning before breakfast, write it down and compare to yesterday's weight.
- Take medicine as prescribed.
- Check for swelling in your feet, ankles, legs, and stomach.
- Eat food low in salt.
- Balance activity and rest periods.


Which Heart Failure Zone are you today? **GREEN, YELLOW, or RED ?**

Keep track of your symptoms (See daily track of your blood pressure, heart rate, activity, medication, and fluid intake).

ALL CLEAR


ALL CLEAR –This zone is your goal!
Your symptoms are under control. You have:

- No shortness of breath (cause by fluid in the lungs or poor heart function).
- No weight gain more than 2 pounds.

<p>GREEN ZONE</p>	<ul style="list-style-type: none"> No swelling in your feet, ankles, legs, and stomach. No chest pain. <p>No heart palpitations.</p>
<p>CAUTION Yellow Zone</p> 	<p>CAUTION -YELLOW ZONE – THIS IS A WARNING CALL DOCTOR</p> <p>You gained more than 3 pounds in 1 day or 5 pounds or more in 1 week (Excess salt plays a part in water build up).</p> <ul style="list-style-type: none"> You have more shortness of breath than usual (Fluid in your lung). You have increased swelling of your feet, ankles, legs or stomach (May need to consider cutting down salt and fluid intake) You are feeling more tired or no energy. You have a dry hacky cough. You have feeling of uneasiness; you know something is not right. <p>You have difficulty lying down and shortness of breath. You need to sit upright in a chair to sleep.</p>
<p>EMERGENCY RED ZONE</p>	<p>EMERGENCY: GO TO THE EMERGENCY ROOM OR CALL 911 IF:</p> <ul style="list-style-type: none"> You are struggling to breath or unrelieved shortness of breath while sitting still. You have chest pain. You are confused or cannot think clearly. You feel your heart is racing or feel persistent heart palpitations. You feel lightheaded.

Note. Heart Failure Zones. Adapted from the Institute of Health (IHI). Available at <http://www.ihl.org>

Appendix G: Approval from BMC IRB to Conduct QI Project



DEPARTMENT OF DEFENSE
OFFICE OF THE SECRETARY

REPLY TO
ATTENTION OF

MCHE-ZIR 27 April 2017

MEMORANDUM FOR Ms. Lisette Melton

SUBJECT: Determination of Your Project, "Implementation of Evidence-Based Discharge Education 2013 American Heart Association (AHA) Guidelines in a Military Hospital Setting to Improve Adherence to Patient Self-Care Management and Decrease 30-Day Readmissions among 55 and Older Heart Failure Patients"

1. Your project, "Implementation of Evidence-Based Discharge Education 2013 American Heart Association (AHA) Guidelines in a Military Hospital Setting to Improve Adherence to Patient Self-Care Management and Decrease 30-Day Readmissions among 55 and Older Heart Failure Patients" was reviewed by Center for Nursing Science & Clinical Inquiry (CNSCI) staff, where the following was determined.

The activity as described is an evidence-based practice (EBP) project and does not meet the definition of research as defined in 32 CFR 219.102(d), as it is not generalizable. Submission of an IRB research application is not required.

2. Any manuscripts resulting from the project described must be submitted through the Department of Clinical Investigation for approval prior to publication IAW BAMC Memorandum 70-1, "Review and Clearance of Scientific Presentations and Publications." Many journals are interested in publishing EBP projects. If you do decide to publish your findings, please use paragraph headings such as: "issue," "procedures for collecting and evaluating information," "information found," "lessons learned," etc. and avoid using headings such as "research questions," "methods," "results," "study limitations," etc.

3. For any questions or concerns, please contact christopher.p.weidlich.mil@mail.mil or by telephone at 916-9020.

X

Appendix H: Approval of IRB from University of the Incarnate Word



May 8 2017

Fr. Ms. Lisette Melton

Protocol title: Implementation of Evidence-Based Discharge Education 2013 American Heart Association (AHA) Guidelines in a Military Hospital Setting to Improve Adherence to Patient Discharge Education

Lisette:

Your request to conduct the study titled "Implementation of Evidence-Based Discharge Education 2013 American Heart Association (AHA) Guidelines in a Military Hospital Setting to Improve Adherence to Patient Discharge Education" was approved by Exempt review on 05/08/2017. Your IRB approval number is 17-05-006. Any written communication with potential subjects or subjects must be approved and include the IRB approval number.

Please keep in mind these additional IRB requirements:

- This approval will expire one year from 05/08/2017.
- Request for continuing review must be completed for projects extending past one year. Use the **IRB Continuing Review Request form**.
- Changes in protocol procedures must be approved by the IRB prior to implementation except when necessary to eliminate apparent immediate hazards to the subjects. Use the **IRB Amendment Request form**.
- Any unanticipated problems involving risks to subjects or others must be reported immediately.

Approved protocols are filed by their number. Please refer to this number when communicating about this protocol.

Approval may be suspended or terminated if there is evidence of a) noncompliance with federal regulations or university policy or b) any aberration from the current, approved protocol.

Congratulations and best wishes for successful completion of your research. If you need any assistance, please contact the UTW IRB representative for your college/school or the Office of Research Development.

Sincerely,



Research Officer, Office of Research Development

University of the Incarnate Word

Appendix I: Heart Failure Readmissions Data Abstraction Characteristics

Heart Failure Readmission Data Abstraction Characteristics	Source of Data	Data Abstractor
Age	Internal organization EMR	DNP Student (Ms. Melton)
Sex	Internal organization EMR	DNP Student
Racial/ethnic background	Internal organization EMR	DNP Student
Admission date	Internal organization EMR	DNP Student
Discharge disposition	Internal organization EMR	DNP Student
Admitting service	Internal organization EMR	DNP Student
Readmission since the last discharge	Internal organization EMR	DNP Student
The unit patient is admitted	Internal organization EMR	DNP Student
Documentation of evidence-based heart failure discharge education	Internal organization EMR	DNP Student
Documentation of HFDEP teaching material given to the patient before discharge	Internal organization EMR	DNP Student
Total heart failure patients admitted to Telemetry Readmissions rates (7, 14, 21, & 28 days)	Internal organization EMR	DNP Student

Note. Characteristics used for heart failure readmissions from Best Medical Center's (BMC), Electronic Medical Record (EMR)

Appendix J: Kellog Model

Logic Model (Formative and Summative Evaluation Tool)

Program Evaluation Model (Formative and Summative)

Program Objectives: Over the next 3 months, DNP student will develop discharge education program for the heart failure patients to ensure that 90 % of 55 and older heart failure patients will receive HFDEP education containing symptom management and self-care management guide before discharge from the acute care setting to home.

Strategy of activity	Output or outcome	Formative	Summative	Indicator	Data source	Data collection instrument	When collected	By whom
Patient discharge education strategy	Implementation of program and High rate of patients participating in discharge education and receiving teaching materials.	✓		90 percent or greater patient receiving discharge education is documented in the EMR by nurses Current rate is 0% compliance	Electronic Medical Record (EMR) Documentation will be done in the Nursing Clinical Note and Treatment Flowsheet indicating education was provided.	Excel spreadsheet Patient discharge summary Nursing documentation. Data will be collected week after the intervention 15 June 2017.	At beginning of each week after program start	DNP Student Telemetry Nursing staff DNP student will be monitor compliance by medical chart review provided by the nursing staff.

Appendix J: Kellog Model – Continued

Program Evaluation Model (Formative and Summative)

Documentation of heart failure discharge education	Increased documentation of education provided	✓		Bench mark 90% Documentation of education provided	Electronic Medical Record (EMR)	Excel spreadsheet Patient discharge summary Nursing documentation	At beginning of each week after program start	DNP Student Telemetry Nursing staff
patient discharge education strategy	Increased patient understanding of symptom recognition and adherence to medical regimen using the self-care management guide	✓		90 percent of patients who receive discharge education report increased understanding of symptom recognition and use of self-care management guide	Teach-back questionnaires	Teach-back questionnaires See Appendix C	Beginning of program, end of program	DNP Student Telemetry Nursing staff DNP student will be monitoring compliance by chart reviews

Appendix J: Kellog Model - Continued

Program Evaluation Model (Formative and Summative)

Improve compliance with 2013 AHA guidelines on discharge education	Increase Nurses adherence in educating heart failure patients using the AHA guidelines.		✓	90% of patient receiving evidence-based education.	Electronic Medical Record (EMR)	Excel spread sheet EMR for heart failure Nursing Initiated orders See Figure 4	Beginning of program implementation Monitor weekly	DNP Student Telemetry Staff nurse
Increased heart failure patients discharged home with a copy of written instruction/manual at discharge	Improved symptom recognition and self-care management		✓	Improved self-care management. Decreased 30-day readmissions	Internal data base, EMR, Excel spreadsheet	Excel data base EMR	Beginning of program implementation Monitor weekly	DNP Student

Appendix K: Evaluation Using Kellogg Logic Model

Project Objective #1. By June 12, 2017, 90% (68) of the Telemetry RNs and LVNs will attend the heart failure discharge education class.

Component	Evaluation Component	What to evaluate	How to get information (What method, where will you find reliable and valid information that you need)	When/how often to do this	Who is responsible	Tool status
Activity	<p>Provide discharge education training using teach-back methods on three color (green, yellow, red) heart failure zones and self-care management diary based on current 2013 AHA guidelines.</p> <p>Provide sample teach-back questions.</p> <p>Identify heart failure Champions</p>	<p>Evaluate the content material recommended by 2013 AHA heart failure guidelines on discharge education to ensure the content material meets the standards</p> <p>Staff knowledge on teach back methods</p> <p>Staff champions participating in staff teaching.</p>	<p>Literature searches. Current 2013 AHA heart failure guidelines.</p> <p>Consult with various stakeholders and the Telemetry staff members.</p> <p>Endorsement from Chief of Cardiology.</p>	EBP II during program implementation.	DNP Student	<p>Appendix C</p> <p>Appendix F</p>

Appendix K: Evaluation Using Kellogg Logic Model - Continued

Project Objective #1. By June 12, 2017, 90% (68) of the Telemetry RNs and LVNs will attend the HFEP education class.

<p>Outputs</p>	<p>Deliver 15 training sessions lasting 150 minutes in-service and additional 2-3 in service on all shifts for RNs and LVNs for Telemetry staff.</p> <p>Approximately train 86 staff members.</p> <p>Teach-back questionnaires</p>	<p>Evaluate to ensure training is appropriately tailored for the staff nurses and to ensure the content material meets the intended target population</p> <p>Deliver 100 copies of HFDEP booklet to Telemetry Unit by 5 June.</p>	<p>Distribute the booklet for content appropriateness from the Telemetry staff members.</p>	<p>EBP II. Immediately after in-service.</p>	<p>DNP Student</p>	<p>N/A</p>
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Appendix K: Evaluation Using Kellogg Logic Model - Continued

Project Objective #1. By June 12, 2017, 90% (86) of the Telemetry RNs and LVNs will attend the HFEP education class.

	<p>Staff attendance and participation of training sessions. of license (RNs, LVNs) nursing staff HFDEP booklet content material using the teach-back methods.</p>	<p>90% of the staff members will attend the teach-back and HFDEP training by June 6, 2017 as evidenced by sign-in roster.</p> <p>Total number of Telemetry staff participating in the program implementation training.</p> <p>Numerator: Documentation of staff sign-in roster indicating they received the training</p> <p>Denominator: Number of staff attended the heart failure Program Implementation.</p> <p><u>Goal: 90% compliance</u></p>	<p>Staff able to provide discharge education using teach-back and knowledge of HFDEP booklet.</p> <p>Reinforce patient knowledge as needs identified during the education process.</p>	<p>EBP II.</p> <p>Staff education provide 2, 5 CEU for attending 2.5 hours of training..</p> <p>Offer 15 class sessions to accommodate both day and night shift until 90% of staff has completed the training before program implementation.</p> <p>Offer 2.25 CEUs for staff attending the class as incentives.</p>	<p>DNP Student</p>	<p>See Appendix A</p> <p>See Appendix B</p> <p>See Appendix C</p> <p>See Appendix D</p> <p>See Appendix E</p> <p>See Figure 4</p>
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Appendix K: Evaluation Using Kellogg Logic Model - Continued

Project Objective #1. By June 12, 2017, 90% (68) of the Telemetry RNs and LVNs will attend the HFEP education class.

Impact	Improved quality of discharge heart failure education by adhering to the 2013 AHA standards.	Nurses are competent to provide discharge education by using the teach-back methods and the HFDEP booklet content material to reinforce patient knowledge on heart failure care.	Review 85 charts to determine if recommended discharge education is documented in the nursing notes in the EMR.	DNP II. 3 months after program implementation.	DNP Student	N/A
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Appendix K: Evaluation Using Kellogg Logic Model - Continued

Project Objective: # 2.By September 12, 2017, 90% adherence of RNs and LVNs in providing discharge education using teach-back methods on three heart failure zones and self-care management guide to heart failure patients that are 55 years of age and older before discharge.

Evaluation Model	Evaluation Component	What to evaluate	How to get information (What method, where will you find reliable and valid information that you need)	When/how often to do this	Who is responsible	Tool Status
Activity	<p>Provide education and training using HFDEP (self-care management guides so that the staff understands how to use the discharge education material for teaching patients).</p> <p>Provide copy of the HFDEP booklet on self-care management guide.</p> <p>Develop self-care management guide</p>	<p>Determine if self-care management guide recommended by the 2013 AHA guidelines.</p> <p>Patients receiving HFDEP education before discharge.</p> <p>Documentation of patient received discharge education using teach-back methods.</p> <p>Total number of patients received HFDEP education using the teach-back methods before discharge.</p>	<p>Documentation of patient received discharge education before discharge in the EMR.</p> <p>Chart review- Perform 100% of patients with heart failure diagnosis admitted to Telemetry Unit.</p>	<p>EBP II. During program implementation.</p> <p>Weekly review of nursing documentation in the (EMR) indicating the patient received the HFDEP education.</p>	<p>DNP Student</p> <p>Unit Manager and Charge Nurse</p>	<p>See Appendix A</p> <p>See Appendix E</p> <p>See Appendix I</p>

Appendix K: Evaluation Using Kellogg Logic Model - Continued

Project Objective: # 2.By September 12, 2017, 90% adherence of RNs and LVNs in providing discharge education using teach-back methods on three heart failure zones and self-care management guide to heart failure patients that are 55 years of age and older before discharge.

Outputs	Reminder Nursing Initiated order programed in the EMR	Patient receiving self-care management guide before discharge. DNP student will deliver 100 copies of HFDEP booklet to Telemetry Unit by 5 June 2017	<p>Chart review. 100% of heart failure patients admitted to Telemetry.</p> <p>Documentation of education material given to patient before discharge.</p> <p>AHA quality measures Numerator: Heart failure patients with documentation that they or caregivers received discharge education containing all of the following:</p> <ul style="list-style-type: none"> • Activity level • Diet • Discharge medications • Follow-up appointments • Weigh monitoring • What to do if symptoms occur. 	EBP II. During program implementation.	DNP Student	N/A
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Appendix K: Evaluation Using Kellogg Logic Model - Continued

Project Objective: # 2. By September 12, 2017, 90% adherence of RNs and LVNs in providing discharge education using teach-back methods on three heart failure zones and self-care management guide to heart failure patients that are 55 years of age and older before discharge.

Outcomes	Patient receiving self-care management guide.	To increase the percentage, from baseline, of patients receiving heart failure discharge education before discharge. heart failure education indicators. Numerator: Documentation in the EMR that the patient has received education containing 6 core topics before discharge. Denominator: heart failure patients discharged to home	Documentation in the EMR that patient received the education material. Improved adherence to providing copy of the HFDEP booklet to heart failure patients before discharge and document in the EMR. Improved patient knowledge on heart failure symptom recognition evidence by patient able to teach-back to the nursing staff by the end of patient education.	EBP II. During program implementation. Weekly collect data in the nursing documentation in the EMR.	DNP Student	N/A
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		Compare base line data with post implementation data. Goal: 90% compliance				
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Appendix K: Evaluation Using Kellogg Logic Model - Continued

Project Objective: # 2. By September 12, 2017, 90% adherence of RNs and LVNs in providing discharge education using teach-back methods on three heart failure zones and self-care management guide to heart failure patients that are 55 years of age and older before discharge.

Impact	Improved self-care management by patient and quality of care delivered by AHA standards.	Documentation of heart failure discharge education provided.	Increase patient knowledge of symptom recognition and actions to take.	DNP II & EBP 2. Ongoing.	DNP Student	N/A
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Appendix K: Evaluation Using Kellogg Logic Model - Continued

Project Objective: # 3. By September 12, 2017, 90% of the Telemetry Unit heart failure patients older than 55 years will receive a copy of HFDEP booklet before discharge.

Evaluation Model	Evaluation Component	What to evaluate	How to get information (What method, where will you find reliable and valid information that you need)	When/how often to do this	Who is responsible	Tool Status
Activity	<p>Provide education and training using HFDEP (self-care management guides so that the staff understands how to use the discharge education material for teaching patients).</p> <p>Provide copy of the HFDEP booklet on self-</p>	<p>Determine if self-care management guide is appropriate and meets core topics recommended by the 2013 AHA guidelines.</p> <p>Total number of HFDEP booklet issued to the Telemetry Unit compared to the number of patient offered HFDEP booklet. Review the number of HFDEP booklet</p>	<p>Documentation of educational material given to patient before discharge in the EMR.</p> <p>Chart review- Perform 100% of patients with heart failure diagnosis admitted to Telemetry Unit.</p>	<p>EBP II & DNP II During program implementation and evaluation.</p> <p>Weekly review of nursing documentation in the (EMR) indicating the patient received the HFDEP booklet.</p>	<p>DNP Student</p> <p>Unit Manager and Charge Nurse</p>	<p>See Appendix E</p> <p>See Appendix D</p> <p>See Figure 4.</p>

	care management guide. Develop self-care management guide.	remaining at the end of the program.				
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Appendix K: Evaluation Using Kellogg Logic Model - Continued

Project Objective: # 3. By September 12, 2017, 90% of the Telemetry Unit heart failure patients older than 55 years will receive a copy of HFDEP booklet before discharge.

Outputs	Reminder Nursing Initiated order programmed in the EMR	Patient receiving self-care management guide before discharge. DNP student will deliver 100 copies of HFDEP booklet to Telemetry Unit by 5 June 2017	Chart review. 100% of heart failure patients admitted to Telemetry Unit. Documentation of education material given to patient before discharge.	EBP II. During program implementation.	DNP Student	Nursing Initiated orders programmed in the EMR
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Appendix K: Evaluation Using Kellogg Logic Model - Continued

Project Objective: # 3. By September 12, 2017, 90% of the Telemetry Unit heart failure patients older than 55 years will receive a copy of HFDEP booklet before discharge.

Outcomes	Patient receiving self-care management guide.	<p>To increase the percentage, from baseline, of patients receiving heart failure discharge charge education materials prior to discharge.</p> <p>Heart failure measures.</p> <p>Numerator: Patients discharged home with a copy of written instruction or educational materials given to patient or care provider at discharge.</p>	<p>Documentation in the EMR that patient received the education material.</p> <p>Improved adherence to providing copy of the HFDEP booklet to heart failure patients before discharge and document in the EMR.</p> <p>Improved patient knowledge on heart failure symptom recognition evidence by patient able to teach-back to the nursing staff by the end of patient education.</p>	<p>EBP II. During program implementation.</p> <p>Weekly collect data in the nursing documentation in the EMR.</p>	DNP Student	<p>See Appendix E</p> <p>See Appendix F</p> <p>See Figure 4.</p>
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		Denominator: heart failure patients discharged home Compare base line data with post implementation data. Goal: 90% compliance				
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Appendix K: Evaluation Using Kellogg Logic Model - Continued

Project Objective: # 3. By September 12, 2017, 90% of the Telemetry Unit heart failure patients older than 55 years will receive a copy of HFDEP booklet before discharge.

Impact	Improved self-care management by patient and quality of care delivered by AHA standards.	Increased patient satisfaction and increase knowledge	Once successful implementation on one unit, this program can be deployed hospital -wide.	DNP II & EBP 2. Ongoing.	DNP Student	N/A
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Appendix K: Evaluation Using Kellogg Logic Model - Continued

Project Objective: # 3. By September 12, 2017, 90% of the Telemetry Unit heart failure patients older than 55 years will receive a copy of HFDEP booklet before discharge.

Evaluation Model Kellogg Logic	Evaluation Component	What to evaluate	How to get information (What method, where will you find reliable and valid information that you need)	When/how often to do this	Who is responsible	Tool status
Activity	3W nursing staff will provide education and training through use of self-care management guide recognizing symptom recognition.	Evaluate content teaching material meets discharge education using the 2013 AHA guidelines.	Literature searches. 2013 AHA guidelines. Endorsement by Chief of Cardiology. AHA quality measures Numerator: Heart failure patients with documentation that they or caregivers received discharge education containing all of the following: <ul style="list-style-type: none"> • Activity level • Diet • Discharge medications • Follow-up appointments • Weigh monitoring 	EBP II during program implementation.	DNP Student will monitor compliance by chart audits to see if the staff nurses are providing discharge education.	N/A

	Provide copy of self-care management guide.		<ul style="list-style-type: none"> What to do if a symptom occurs. 			
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Appendix K: Evaluation Using Kellogg Logic Model - Continued

Project Objective #4: By 90 days from the program implementation, adherence to self-care management will decrease 30-day Readmission by 12%.

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Outputs	90% of the heart failure patients on 3W Telemetry heart failure receive discharge education.	Patients receiving self-care management discharge education before discharge. Chief of Cardiology endorsement of heart failure Tool Kit	Chart reviews. 3 months data on readmissions from internal retrospective data and EMR data abstraction using variables developed. Nursing EMR documentation. Develop indicators to be measured. Indicators: 30-day readmissions < 7 days, <14 days, <21 days, <28 days.	EBP II. During program implementation. Weekly collect data.	DNP Student	N/A
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Appendix K: Evaluation Using Kellogg Logic Model - Continued

Project Objective #4: By 90 days from the program implementation, adherence to self-care management will decrease 30 day Readmission by 12%

Impact	Decrease 30 day readmission, especially < 7 days readmission.	Patient adherence to symptom management and self-care management.	<p>EMR review.</p> <p>Statistical analysis comparing pre implementation/post implementation of % decrease in 30 day readmission.</p> <p><u>Outcome goal: < national benchmark of 28%</u></p> <p><u>Measure readmissions rate with internal organization baseline data with intervention data.</u></p>	DNP II. 90 days post implementation. Weekly data abstraction.	DNP Student	N/A
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Appendix K: Evaluation Using Kellogg Logic Model - Continued

Project Objective #4: By 90 days from the program implementation, adherence to self-care management will decrease 30 day Readmission by 12%

<p>Outcomes</p>	<p>Improved staff adherence to providing discharge education using teach-back methods.</p>	<p>Short-term: Improved nurses' adherence with providing 90% of patient education.</p> <p>Short-term: Improved patient recognition of symptoms of heart failure three zones.</p> <p>Long-term: Decreased 30 day readmission within 90 days of program implementation.</p>		<p>EBP II and DNP II 90 days post program implementation and evaluation for program effectiveness.</p>	<p>DNP Student</p>	<p>See Appendix E &F</p> <p>See Table 1.</p>
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