Implementation of a Heart Failure Checklist to Reduce 30-Day Readmission Rate

By

Mychell G. Zepeda

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Approved: *Judy Walloch, EdD RN*
(DNP Project Team Chairperson name, credentials & date)

Approved: *Carrie Hagen RN, MSN, CPPS*
(DNP Project Team Member name, credentials & date)

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Abstract

This project attempted to reduce readmissions of HF patients at an 81-bed acute care community hospital, located in the Midwest, through the implementation of a comprehensive checklist that uses interdisciplinary evidence-based interventions upon the admission of all HF patients. This checklist was used by the patient's care team during the hospitalization to individualize care in an attempt to improve the patient's recovery outcome and to decrease the likelihood of readmission within 30 days of discharge. If the trend in readmissions for HF patients at this community hospital continues to increase, the financial costs to the facility and the health burden to the patients would negatively impact the community.

Keywords: HF, hospital readmissions, checklists, heart failure treatment and medication, pharmacological treatment, diagnostic assessment, and transitional care

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Implementation of a Heart Failure Checklist to Reduce Readmissions

Chapter I

Chronic diseases are significant medical, economic, and social problems in many of the developed countries (Damps-Konstańska et al., 2016). Outpatient management of chronic illnesses is not always optimized, causing patients to seek symptom relief and care through the emergency room. Providing care in the patient's environment, however, has helped reduce emergency room visits (Morphew et al., 2013). For example, research shows that heart failure readmissions have been preventable in up to 50% of the patients who were readmitted to the hospital (Basoor et al., 2013). Heart failure (HF) is a chronic condition and results from a structural or functional disorder of the heart that affects the ability of the ventricles to fill, empty, or both (Brink, 2018). Additionally, HF is a major cause of morbidity and mortality, with a 5-year mortality rate that ranges from 44% to 77%. Luckily, current evidence shows reduced morbidity and mortality in HF patients who are treated with the Heart Failure Core Measure Bundle (Brink, 2018). Such specialized care decreases hospital admission rates and improves the overall quality of life for progressive chronic illnesses (Case, Haynes, Holaday, & Parker, 2010). Importantly, HF can be successfully managed in an outpatient setting if a plan of care is implemented before discharge with an effective discharge-planning tool and diagnosis-specific treatment teams and plans (Basoor et al., 2013).

Background and Significance

An estimated 26 million people worldwide have HF, and 5 million of those are Americans; that number is predicted to double in the United States by 2040 (Aguanno & Samson, 2018; Case et al., 2010). In the United States, HF is the most commonly diagnosed condition at admission, and it accounts for approximately 5% of all acute hospital admissions in

Europe (Aguanno & Samson, 2018). Heart failure readmission rates are increasing, which prompted the U.S. Centers for Medicare & Medicaid (CMS) to initiate the Hospital Readmissions Reduction Program (HRRP) in 2012. The program charged CMS to reduce payments to inpatient prospective payment system hospitals with excessive readmissions, effective for discharges beginning on October 1, 2012 (CMS, 2019). The program offers hospitals financial incentives to reduce unnecessary hospital readmissions, which are costly, especially to patients covered under Medicare (CMS, 2019). Healthcare facilities have been challenged under HRRP to reduce the number of Medicare and Medicaid patients readmitted to the hospital within 30 days of discharge. Each year, roughly 2 million patients are readmitted, costing Medicare $27 billion, including $17 billion spent on readmissions classified as potentially avoidable (CMS, 2017). To decrease the rates of readmissions, CMS fines facilities for readmitting too many Medicare or Medicaid patients within the 30-day window (Centrella-Nigro et al., 2016).

Under the HRRP, patients with a HF diagnosis are prioritized when admitted to the hospital to ensure the HF treatment guidelines set by CMS are followed. Assessment of patients diagnosed with a progressive chronic disease such as HF provide opportunities for clinicians to find solutions, reduce readmission rates, and increase potential reimbursement. These measures decrease costs and help improve patient outcomes. Improving patient outcomes by improving the quality of life by providing evidence-based care is significant for nurses and the provision of comprehensive patient care.

The Joint Commission (TJC) is an independent, not-for-profit organization that accredits and certifies nearly 21,000 healthcare organizations in the United States. This accreditation is a nationwide recognition that reflects the organization’s commitment to meet high-performance

standards (TJC, 2018). TJC uses evidence-based practices that have been shown to improve patient outcomes, including treatment standards for HF. The standards they recommend for HF include prescribing angiotensin-converting-enzyme (ACE) inhibitors and angiotensin II receptor blockers (ARBs) at discharge, or if not, the contraindication should be documented by the care provider (TJC, 2010). TJC also recommends education on smoking cessation, activity levels, diet, symptom monitoring, and weight monitoring (2010). The treatment team is also responsible for ensuring that the patient has a follow-up appointment within seven days, as well as recent ejection fraction documented that reports the left ventricular systolic function and the left ventricular systolic dysfunction. When an ejection fraction is less than 40% or documented as moderate to severe dysfunction, the patient is considered to have the diagnosis of heart failure (TJC, 2010).

The National Quality Forum (NQF), with a collaboration of stakeholders, works with CMS on evidence-based practices shown to have a major impact on patient outcomes and hospitals related to treatment and best practice for chronic diseases (CMS, 2016). The NQF focused on HF and came to a consensus on a set of core measures. Under the first Core Measure, CMS measures how many HF patients are readmitted to the hospital within 30 days, as well as the mortality rate within 30 days after being admitted with HF (CMS, 2016). The other two core measures focus on three medications that have been proven to improve the quality of life, decrease mortality rates, and decrease readmission rates: ACE inhibitors, ARBs, and beta-blocker therapy for left ventricular systolic dysfunction (CMS, 2016). The Core Quality Measure Collaborative set a goal to identify core sets of quality measures that payers and insurance companies have committed to using for reporting purposes (CMS, 2019). The core measure sets

are a step toward alignment of quality between public and private payers and act as a framework for providing care proven by evidence to give the patient the best outcome.

Needs Assessment

An average of 1 million people are admitted annually to U.S. hospitals with the diagnosis of heart failure, and one-third of those are readmitted within a 30-day time frame (Centrella-Nigro et al., 2016). The annual cost of these readmissions is over $2 billion to Medicare alone, with a potential 3% reduction in Medicare reimbursement (Centrella-Nigro et al., 2016). At this Midwest community hospital, HF patients are admitted to the ICU, telemetry/stepdown, or the medical-surgical units and are readmitted because of a lack of HF symptom control. Symptoms that cause HF patients to seek medical attention include dyspnea, orthopnea, fatigue, and exercise intolerance (Aguanno & Samson, 2018). These HF readmissions occur before the 72-hour follow-up phone call made by outpatient complex care managers, to assess how the patient is managing HF at home since being discharged, or before the sixth day when patients have a follow-up appointment with the primary physician. During FY2017, the rate of readmissions before the follow-up appointment was 63%, and of those patients, 82% died before they made it to their follow-up appointment (A. Snyder, personal communication, February 14, 2018). This hospital's HF outcomes align with national research revealing that approximately half of HF readmissions occur before the first scheduled outpatient appointment (Hadi et al., 2014). Healthcare providers need to take a more proactive approach to the treatment of HF patients to efficiently address this growing population of patients as they transition to the outpatient setting.

In 2017, 305 total patients with varied diagnoses were discharged from this community hospital, and all were categorized as being at risk for being readmitted within 30 days (C. Hagen, personal communication, May 31, 2018). These patients are classified as high risk because their

diagnoses are classified as such under the HRRP. Some patients are categorized as high risk independent of their diagnosis if they have needs related to social services, including the need for home health services, need for home oxygen, recent admission, lack of family support, or refusal of the need for nursing home placement. Of the 305 patients discharged and readmitted within 30 days in 2017, 8% had a diagnosis of HF. The demographics of the readmitted population comprised 96% white, 60% women, 40% men, and 92% aged 65 years or older. The insurance coverage breakdown was 80% Medicare, 12% Medicaid, and 4% private insurance. Of the patient population discharged, 48% were discharged to a skilled nursing unit, 44% were discharged home, and 8% were discharged with home health. Finally, 64% of these HF patients were deceased within the 30-day window (C. Hagen, personal communication, May 31, 2018).

This Midwest healthcare system has standards for all of its 13 regionally located acute care facilities to ensure that the organization successfully meets strategic goals. The organization reports that the 30-day HF readmission rate is currently above the national average, and it places a priority on reducing this number. Currently, the overall readmission rates are 19.1%, compared to the 18.5% national average (A. Snyder, personal communication, February 14, 2018). To assist the organization to achieve its goal, this project aims to reduce the number of HF patients readmitted to this community facility. During FY2017, 245 patients were readmitted within a 30-day window of discharge, which is a rate of 58%. The facility had a loss of approximately $2,600 of reimbursement, which is a 5.87% impact (OSF HealthCare, 2017). Reducing these figures is a major priority of this healthcare facility and all involved in the direct care of this patient population to help ensure that the system's goals are met to remain a highly reliable organization and to continue to provide the best evidence-based care that produces optimal patient outcomes. Additionally, changes in Medicare have prompted the need to reassess readmission rates. A

review of the hospital's reportable data guides the need for change. The system's administration supports the changes that support the culture and the goal of quality and safety to create superior clinical outcomes and to eliminate all preventable harm.

To facilitate buy-in, the healthcare system conducted a chart review to determine how many HF patients with a reduced ejection fraction were readmitted within 30 days, which helped identify the need to utilize the evidence-based triple medication therapy (A. Snyder, personal communication, February 14, 2018). Patients within the organization's services who were discharged only on an ACE-I/ARB or beta-blocker had a 43% 30-day readmission rate and a 44% 30-day mortality rate. Of the patients on the triple therapy, 10% had a 30-day readmission rate, and 6% a 30-day mortality rate (A. Snyder, personal communication, February 14, 2018). These significant numbers gave the organization the motivation to make sure that all HF patients receive the same evidence-based treatment. The administration interpreted the data as an opportunity to provide continuity of evidence-based care for this population of patients. Because the data showed that the organization was not living up to its mission, the administration realized the need to provide outreach for this population to support them through the continuum of care that does not end once the patient is discharged. Changes are needed at all of the system's hospitals; the HF checklist is a tool that this project used at one facility to help providers and the care treatment team keep track of HF bundle components.

An opportunity exists to place all HF evidence-based interventions in an easily accessible format for all disciplines involved in the patient's care. Currently, all disciplines document their interventions in the electronic health record (EHR); however, the information is dispersed throughout the record and is difficult to locate promptly. Additionally, no current treatment plan involves a multidisciplinary approach to the treatment of HF patients, so this checklist helped

pull the team together for improved patient outcomes. The organization is currently trying to improve outcomes and the treatment of HF patients, so this checklist can help this facility account for the changes that are forthcoming and shows initiative and accountability for these changes.

Problem Statement

This project attempts to reduce readmissions of HF patients at an 81-bed acute care community hospital, located in the Midwestern US, through the implementation of a comprehensive checklist that uses interdisciplinary evidence-based interventions upon the admission of all HF patients. This project is an attempt to improve the patient's recovery outcome and to decrease the likelihood of readmission within 30 days of discharge. If the trend in readmissions for HF patients at this community hospital continues to increase, the financial costs to the facility and the health burden to the patients negatively impacts the community.

Project Aim

This project aims to decrease the number of HF patients readmitted within 30 days of their last discharge and provide a better outcome in the management of their chronic illness. The first objective of this project is to reduce hospital readmissions at a Midwest community hospital for patients with a diagnosis of heart failure to meet the readmission benchmark of at least a 5% reduction within 3 months. The second objective is to achieve 85% compliance in use of the developed HF checklist by the interprofessional team in the utilization of and completion of the checklist for all patients with a primary diagnosis or history of HF within 3 months. The HF

checklist was analyzed for discrepancies after the HF patient had been discharged, and an appropriate action plan was developed for any trends noted in knowledge gaps.

PICOT

A format used to develop an answerable, researchable question is the PICOT question. PICOT is an acronym that stands for patient, problem, or population; intervention; comparison, control, or comparator; outcome; and time. The PICOT question for this project is: For adult patients with a diagnosis of HF in an inpatient setting, how does the use of a disease-specific checklist by the interprofessional care team compare to current practice in reducing 30-day readmissions after three months?

To reduce 30-day admissions, an evidence-based practice HF checklist was implemented utilizing an interprofessional care team approach (Saunier, 2017). The use of the HF discharge checklist is intended to develop a framework for a patient's plan of care. Hadi et al. (2014) found that when facilities implemented multiple strategies such as formal education and supportive interventions (e.g., home health, case management, and early primary care follow-up), the number of HF patients readmitted to the hospital decreased. Multiple disciplines, after reviewing a newly designed HF checklist, provided input about the important interventions for the HF population they care for in the study hospital (Basoor et al., 2013).

Congruence with Organizational Strategic Plan

This community hospital is part of a large integrated healthcare network serving the Midwest. The healthcare system has a strategic plan to provide safe, effective, coordinated systems of care with superior clinical outcomes to those we serve (OSF HealthCare, 2018). The mission statement is, “In the spirit of Christ and the example of Francis of Assisi, the Mission is to serve persons with the greatest care and love in a community that celebrates the Gift of Life”

(OSF HealthCare, 2018, para. 1). There are four goals in the strategic plan: “Service excellence and patient experience; extending our ministry through strategic growth; affordability and sustainability; and community of caregivers” (OSF HealthCare, 2018, para. 1). By implementing this HF checklist and ensuring that all evidence-based treatments are in place or have been addressed, the hospital provided the best care for HF patients at their greatest time of need and improve their chance of optimal outcomes and health. Reducing the number of readmitted HF patients may result in an estimated annual savings to the system of $400,000 and an estimated annual savings of $2,400 to the hospital. While the individual hospital’s savings are not significant, the potential savings for the healthcare system is. Finally, an interprofessional collaboration involving the use of the HF checklist within the hospital and the outpatient settings aligns with the belief of the community of caregivers (OSF HealthCare, 2018).

Synthesis of Evidence

The search process for this topic was through the utilization of the Bradley University Library’s electronic database, including the Cumulative Index to Nursing and Allied Health (CINAHL), which connects to EBSCO*host*. This comprehensive database offers full-text files of peer-reviewed articles and research. Beginning with phrases and words to help produce appropriate articles and then modifying to add specificity, the following keywords were used: *HF*, *hospital readmissions*, *checklists*, *heart failure treatment and medication*, *pharmacological treatment*, *diagnostic assessment*, and *transitional care*. The search yielded articles that discussed checklists as a source of improving patient outcomes. The articles included were not limited to care for HF patients, but also included methods to support the benefits of utilizing pharmacists, dietitians, and physical therapists in disease-specific care. Inclusion criteria for articles included years of publication 2010–2018 and English only;

excluded were the effects of comorbidities and other diagnoses. Although the literature supports the use of checklists to improve patient outcomes in multiple areas of healthcare, limited evidence was found regarding the use of HF checklists in reducing readmissions through the improvement of HF care and treatment. Another resource utilized was ExLibris, part of the ProQuest Company. This method is a direct route to electronic full-text records through OpenURL linking. Journals specific to cardiology that had a connection to checklists and HF management were searched. To ensure that a variety of search engines and methods of obtaining pertinent articles on the subject matter were used, assistance in the search process was obtained from the university's librarians. Some studies were eliminated because the HF patient population had requirements of comorbidities, age criteria, economic status, and other qualifying criteria that were not relevant to this project. A total of 26 articles were included in this synthesis of evidence.

30-day readmission of heart failure patients. A review of the literature reveals that patients with the diagnosis of HF have a higher hospital readmission rate than those with other diagnoses, especially within 30 days of a previous hospitalization (Centrella-Nigro et al., 2016; Hadi et al., 2014; Hanlon, 2017; Inouye et al., 2015; Jenq, Doyle, Belton, Herrin, & Horwitz, 2016; Saunier, 2017). It is estimated that 25% to 50% of HF patients are readmitted within 3 to 6 months of their original hospitalization, which can be attributed to the decline in health and debilitating symptoms of breathing problems, fluid retention, and chronic fatigue (Baptiste, Mark, Groff-Paris & Taylor, 2013). Heart failure is the second overall most frequent reason for hospitalization, after childbirth (Centrella-Nigro et al., 2016). Over 1 million people with heart failure are admitted on an annual basis, and one-fourth are readmitted within 30 days (Centrella-Nigro et al., 2016; Hanlon et al., 2017; Harris, Lang, Percy, & Patronas, 2016). Following the

implementation of the Affordable Care Act in 2010 and the Hospital Readmission Reduction Program in 2012, healthcare institutions were charged with reducing 30-day readmissions for patients with certain medical diagnoses (CMS, 2019). Healthcare institutions found it important to adhere to these new standards set forth by CMS, not only to improve patient outcomes, but also to avoid being penalized by decreased reimbursement (Centrella-Nigro et al., 2016; Hadi et al., 2014; Hanlon, 2017; Harris et al., 2016; Inouye et al., 2015; Jenq et al., 2016; van Riet et al., 2016).

Cause of readmission. With the new changes in regulations on reimbursement and the identification of diseases that place patients at a higher risk of being readmitted to the hospital within 30 days, it is important to identify what causes HF patients to repeatedly return to the hospital for treatment. Because HF is one of the two major readmission diagnoses, finding a reason and solution for this phenomenon is important for healthcare facilities and the treatment of this population (Centrella-Nigro et al., 2016).

Exacerbation of HF is the major cause of readmission (Lossnitzer et al., 2014). Some of the exacerbating symptoms of HF, such as shortness of breath, edema, orthopnea, and limited mobility, cause debilitating impairment of life (Aguanno & Samson, 2018; Janssen, Spruit, Uszko-Lencer, Schols, & Wouters, 2011). When these symptoms worsen, HF patients often seek care in the emergency department (Hadi et al., 2014). Patients benefit if they can prevent the number of exacerbations, resulting in a better quality of life (Janssen et al., 2011; Lossnitzer et al., 2014; van Riet et al., 2016). Basoor et al. (2013) found that HF patients were being readmitted because effective measures of treatment such as optimizing medications and dosages, physical therapy, HF education on the disease process and a low sodium diet, and a method of conducting outpatient follow-ups, were not being used or were underutilized. New evidence

suggests that readmission rates are largely driven by the severity of the underlying condition and the socioeconomic background of the patient (Pandey et al., 2016). Ensuring optimal management helps reduce the burden of HF, reduce mortality and hospitalizations, and improve the quality of life (Alagiakrishnan, Banach, Jones, Ahmed, & Aronow, 2013; Baptiste et al., 2013).

Interdisciplinary care. Literature has shown that an interdisciplinary team approach to the treatment of patients with HF improves the chances that all aspects of care have been addressed (Basoor et al., 2013; Boykin, Wright, Stevens, & Gardner, 2018; Edelmann et al., 2018; Kutzleb et al., 2015; Saunier, 2017). New Hanover Regional Medical Center (NHRMC) formed a transition of care team (TOC) for HF patients, specifically to reduce avoidable 30-day readmissions. The TOC team consisted of pharmacists, paramedics, and advanced practice practitioners (APPs) who collaborated in the care of HF patients who were transitioning from the hospital setting to the community (Boykin et al., 2018). All roles were integral to the success of the TOC program. The pharmacists ensured that HF patients had access to medications and that dosages were appropriate and they contacted the APP about medication-related issues. The APPs who practice in the NHRMC cardiology office provided the 5- to 7-day follow-up post-discharge appointments, which have been shown to help decrease readmissions. The paramedics' role was unique because they provided care similar to a home health provider. Under the direction of the APP, they conducted physical and mental assessments; education review on the disease, diet, and medications and their proper use; and intravenous administration of diuretics (Boykin et al.,

2018). The NHRMC TOC collaborative care approach led to a 44% reduction rate within the 30-day window over 18 months (Boykin et al., 2018).

Edelmann et al. (2018) developed a multidisciplinary expert panel in Germany that looked at evidence-based drug therapy, invasive therapy, and care coordination to improve the treatment and outcomes of their HF population. The goal was to develop a structured program for HF patients in which pharmacists and doctors work closely together to formulate a medication plan that continually reviews the appropriateness of each medication and its dosage. The German healthcare system also utilized coordination of care, which assisted in the transition of care from inpatient to outpatient status. Registered nurses provided patient education and worked closely with the cardiologist, primary care provider, pharmacist, and other specialty care providers involved in the co-treatment of the HF patient to coordinate outpatient treatments and follow-up appointments, including lab work, medical appointments, medication management, and structured outpatient phone support. This program saw, with the use of specialized nurses and telephone support, an absolute risk reduction in readmission of 10.11% and mortality of 3.12% (Edelmann et al., 2018). Since the development of the structured program, it has become the standard treatment for all HF patients.

The psychosocial burden along with the physical burden of HF is felt by both patients and families (Ng, Wong, & Lee, 2016). HF patients often require palliative care providers on their care team to ensure treatment beyond the hospital and to improve quality of life (Basoor et al., 2013; Kutzleb et al., 2015; Saunier, 2017). Sometimes, the interdisciplinary team does not know when to initiate palliative care during the process of this life-limiting disease, but early initiation can be beneficial (Bekelman et al., 2011). Continuity of care is ensured through timely, proactive, and sustained follow-up with the addition of palliative care (Ng et al., 2016). When

palliative care is involved, HF patients are better informed about their diagnosis, and services available to help within the community, such as occupational and physical therapy and medical supplies, are prearranged (Ng et al., 2016). Palliative care plays a major role in this process and evidence shows how it can assist in decreasing the readmission rate of HF patients (Ng et al., 2016). This team approach to care helps decrease the anxiety and stress related to transitioning home and provides patients and their caregivers an action plan if symptoms should change to prevent readmissions (Basoor et al., 2013; Bekelman et al., 2011; Bradley et al., 2012; Janssen et al., 2011; Saunier, 2017).

The use of interdisciplinary teams in the successful treatment of patients is a growing trend in many healthcare facilities. The European Society of Cardiology acknowledges the importance of optimizing clinical management of patients with chronic diseases through structured care and a multidisciplinary approach (Giezeman, Arne, & Theander, 2017). Research shows that patients have better outcomes when they receive team care (Basoor et al., 2013; Kutzleb et al., 2015). These interdisciplinary teams may consist of the primary care provider, disease-specific trained nurses, pharmacists, physical and occupational therapists, patient educators, and case managers (Saunier, 2017). The idea of a team approach is used to ensure that patient care is less fragmented (Saunier, 2017). Patient-centered education about medications, discharge instructions, follow-up phone calls, home visits, and coordination with providers is recommended to reduce readmissions (Bradley et al., 2012). Bradley et al. (2012) examined hospitals that utilized a team approach to reduce HF admissions and found that the teams included registered nurses, quality improvement staff, social workers, physicians, senior management, and pharmacists.

Adjunct Therapy. Physical therapy is not often considered when treating an exacerbation of HF, nor is the overall continuation of physical therapy and exercise on the outpatient treatment plan. However, decreased physical functioning of a patient while in the hospital is linked to a greater risk of rehospitalization (Węgrzynowska-Teodorczyk et al., 2018). The clinically predominant sign of HF is intolerance to physical exercise because of the reduction of muscle mass and muscular strength. The impaired perfusion of HF causes hypoxia of the muscle tissue, which increases muscular fatigability, thus limiting a patient's ability to function independently and potentially leading to disability. Physical therapists can assist patients with proper methods and forms of exercises to minimize the negative effect of an exacerbation of HF, limited mobility, and decreased physical fitness (Węgrzynowska-Teodorczyk et al., 2018).

Use of checklists in healthcare. The Optimize Heart Failure Care Program, which was implemented in 45 different countries, was set up to improve the outcomes for patients who had been hospitalized for HF (Cowie et al., 2017). This program utilized a pre-and post-discharge checklist that included evidence-based therapeutic measures and education (Cowie et al., 2017). Some of the items on the checklist were pharmacological interventions such as evidence-based medications, major points of education, follow-up consultations with care providers, and most importantly, the patient's need to be compliant with treatment (Cowie et al., 2017). With utilization of the Optimize Heart Failure Care Program the rate of rehospitalization and decompensation at 30 days was 7% overall. Further, a 1% rate of rehospitalization and decompensation at 30 days was realized when evidence-based medications were used with a controlled heart rate (Cowie et al., 2017). Utilizing an interdisciplinary team for this program could help reduce mortality, reduce readmissions, and improve the quality of care through the

use of a comprehensive checklist, which is a tool that serves as a reminder for medications, counseling, and discharge education (Cowie et al., 2017).

Checklists are developed and utilized by different disciplines within healthcare as a comprehensive tool to improve patient outcomes (Cowie et al., 2017). Basoor et al. (2013) saw a decrease in HF readmissions from 19% to 6%, and after excluding patients who died, the overall decrease was to 2% after implementing a simple 27-question checklist at discharge. When reviewing and reassessing the effectiveness of the HF checklist after 6 months, the readmission rates decreased from 42% to 23% (Basoor et al., 2013). Providing clinicians with an evidence-based checklist in an easy to use tool can be associated with quality care and a decrease in readmissions (Basoor et al., 2013; Cowie et al., 2017). Further, Tanguturi et al. (2016) utilized a discharge checklist with patients who had a percutaneous coronary intervention (PCI), as a means to help reduce hospital readmission. This discharge checklist was used with patients who were assessed and deemed a high risk for readmission to ensure that they had access to appropriate medications and that there would be close follow-up in the outpatient setting (Tanguturi et al., 2016). Following the intervention of the discharge checklist, PCI patient readmission rates in this large tertiary facility fell from 9.6% in 2011 to 5.3% in 2015 (Tanguturi et al., 2016).

The Zhongshan Hospital, a tertiary hospital in Shanghai, implemented comprehensive discharge planning for HF patients as a way to help improve patient outcomes and reduce readmissions (Chen, Zhu, Xu, & Chen, 2016). Part of the discharge planning involved a checklist used to measure the patient's readiness for discharge. The discharge checklist was originally developed by the American Heart Association and the Heart Failure Society of America, and a Chinese version was developed to be completed by the bedside nurses who cared for the patients

in the study (Chen et al., 2016). The information on the checklist dealt with patient education about medications, dietary recommendations, monitoring weight, symptom control, and the importance of follow-up appointments. There was also discussion on the importance of physical activity as well as social support to help decrease the chance of being readmitted. With the observation of a few of the criteria being used, researchers found marked improvements from the nurses in the coronary care unit where the study was being performed. The use of the discharge checklist went from 0% to 100% compliance, discharge education went from 7% to 100% compliance, and the post-discharge follow-up phone call went from 0% to 76% compliance (Chen et al., 2016). This project resulted in positive changes in the overall discharge planning process by the nurses. The study focused on how to effectively train nurses in the importance of their role to implement and utilize a HF checklist to improve patient outcomes (Chen et al., 2016). The success of utilizing checklists in healthcare has proven to be effective in the treatment and management of HF as well as other medical conditions. These benefits include better symptom and disease management as well as better outcomes, including the decrease of readmissions (Chen et al., 2016; Cowie et al., 2017; Tanguturi et al., 2016). The input of an interdisciplinary team was also effective for developing a comprehensive treatment plan for patients (Chen et al., 2016). The HF checklist that was utilized for this project includes input from multiple disciplines to provide their best care to the HF patient and to decrease readmission and improve overall patient outcomes.

Conceptual Framework

The framework that identifies the concepts of this project is the Donabedian model (see Figure 1), which is useful for measuring quality care (National Health Service [NHS], ACT Academy, 2018). Avedis Donabedian, a professor of medical care organization at the University

of Michigan School of Public Health, was commissioned to review the research on quality assessment (Ayanian & Markel, 2016). Donabedian's goal through his lifelong studies was to define and develop a way to measure the quality of healthcare provided and assess how clinical decisions affect the quality by analyzing management and the governance of healthcare systems and resources (Ayanian & Markel, 2016).

The Donabedian triad—structure, process, and outcome—is used to evaluate the quality of healthcare (Ayanian & Markel, 2016). He defined each component of the system: structure as the settings, qualifications of providers, and administrative systems through which care takes place; process as the components of care delivered; and outcome as the recovery, restoration of function, and survival (Ayanian & Markel, 2016). His three-tiered system is a tool used by many healthcare entities to measure their improvement projects to make sure that the project has had the desired impact (NHS, 2018). This model is useful when implementing improvement projects because it measures the structure, the process, and the outcome (NHS, 2018).

Figure 1. Donabedian's Quality Framework model as it applies to implementation of a heart failure checklist at this community hospital. Adapted from "Quality, service improvement and

redesign tools: A model for measuring quality care," by National Health Service Improvement [NHS], ACT Academy, 2018.

Structure measures all of the components that go into the project and the quality of attributes of the organization, including equipment, personnel, culture, and setting (NHS, 2018). For this project, the structure is an 81-licensed bed hospital in the rural Midwest, with an intensive care unit (ICU), telemetry/stepdown, and medical-surgical units, which is working toward being a highly reliable organization (Agency for Healthcare Research and Quality [AHRQ], 2018). Characteristics of a highly reliable organization are mutual accountability, focused feedback at all levels, and the overarching goal of putting patient care and treatment first (AHRQ, 2018). Collaboration creates an atmosphere of care that utilizes evidence-based treatments to optimize patient outcomes. Care providers and the healthcare organization have a stake in preventing HF readmissions and improving the quality of life for this chronic disease population. This project's checklist aligned with the culture of this facility to hold all providers accountable for the comprehensive care HF patients need for optimal outcomes.

The process measure looks at how the system and the process work together to achieve the desired outcome (NHS, 2018). A comprehensive HF checklist was implemented to measure the effectiveness of an interdisciplinary team approach to evidence-based practices for HF to reduce readmissions. This checklist helped the care team adhere to evidence-based interventions individualized to each patient's needs. The transition from the hospital to home or a post-acute care setting has been identified as a critical time during the patient's illness and requires the

assistance of transitional care coordinators to achieve optimal outcomes in the patient's health to aid in decreasing readmissions (Kripalani, Theobald, Anctil, & Vasilevskis, 2014).

The outcome measure asks what impact the improvement made on the outcome of the patient and if it was the desired outcome (NHS, 2018). The project aims to reduce readmission rates of HF patients by implementing an evidence-based disease-specific checklist. The checklist helps ensure that all HF patients receive evidence-based care during their hospitalization and aid in their transition after discharge. A secondary assessment determined whether there was a correlation between the level of use of the checklist and potential causes of readmissions of HF patients after implementation of the checklist, or more specifically, any patterns in which providers omitted care from the HF checklist and HF patients were readmitted.

Chapter II: Methodology

Project Design

This quality improvement project addresses the need to decrease the number of patients readmitted within 30 days of discharge and is specifically focused on patients with the diagnosis of heart failure. The hospital strives to incorporate evidence-based practice to improve patient outcomes, so this project aligns with their values and mission. Heart failure is a chronic, progressive illness that can be managed by a multidisciplinary team (Basoor et al., 2013). Disease management that includes individualized education, as well as early physician follow-up can reduce by 77% the risk of 30-day readmission (Baptiste et al., 2014). Providing a team approach means including the patient and family and/or caregivers in the discussion with members of the healthcare team to ensure consideration of the patient as a whole (Bekelman et al., 2011).

The focus of this quality improvement project is to provide an interdisciplinary approach to patients with HF to ensure that all the evidence-based components are in place through an HF checklist. It was important to identify patients with a history of HF as high-risk for readmission, even those not admitted with the primary diagnosis of HF, so the appropriate plan of care can be implemented. The quality indicator to be measured is hospital readmissions for HF patients within 30 days of their most recent discharge.

Setting

This community hospital is an 81-licensed bed facility that is part of a larger Catholic healthcare network of hospitals in the Midwest. The hospital is located in a mostly low-income, rural community that serves two counties in a midwestern state. Access to healthcare in this area is limited largely due to lack of access to public transportation, emphasizing the importance of

team planning and treatment before discharge. Patients with HF are admitted to one of three adult inpatient departments within the hospital: a six-bed ICU, a 26-bed telemetry/stepdown, or a 28-bed medical-surgical unit.

Population

The population includes all adult patients who were admitted with the diagnosis of HF, as well as patients admitted for other diagnoses who have a history of heart failure and are high-risk for readmission. Many of these HF patients have common comorbidities typically seen with heart failure, including renal insufficiency, diabetes, COPD, and sleeping disorders. Comorbidities were not taken into consideration for the project but may affect the types of medications to be prescribed as well as their dosages. The RN case manager assesses HF patients using a set of factors to determine which patients are considered high risk for readmission. Some of the factors are the diagnosis, access to resources within the community, age, insurance coverage, and support of family and friends. From historical data, an expected average of 25 to 100 HF patients for FY2018 are anticipated to be admitted, but the estimated total for this project over 3 months is 15 to 20 patients. The only criterion for patients to have this checklist utilized is a diagnosis or history of HF. Any HF patient on comfort measures or waiting for discharge to hospice was excluded from the use of the checklist.

It is also important that we look at the population of nurses that were to be the key participants in this project. Depending on census there are usually 3 to 4 nurses, per shift, on the genral medical floor. The telemetry unit averages 4-5 nurses per shift and the ICU has 2 to 3 nurses per shift. I did request a list of the education level and certifications held by all of the nurses on these units, that information was not available, so I can not provide specific numbers. From interacting with the nurses I know that the majority of the nurses have their associates

degree as their entry level nursing education. There are a small number of nurses that have a bachelors degree as their entry level education, some nurses have recently completed their BSN as a fulfillment of their contract while some are starting the process of obtaining their BSN because the deadline is approaching for this minimal requirement to be fulfilled. The telemetry and the general medical floor have two primary charge nurses on day shift and night shift, two secondary charges on night shift, and one to two secondary charges at night. At the start of the project the general medical unit had a unit secretary and the telemetry floor had a unit secretary that was also a nurses tech, if there was a greater need for a nurses tech then the secretary would do both jobs during her eight hour shift.

Tool

The tool that was used in this project was a revised checklist including evidenced-based medications and interventions shown to improve HF management and help to reduce exacerbations in the outpatient setting, potentially resulting in a reduction of readmissions (Basoor et al., 2013). The manager of the Human Subject Project Program, research administration for the health system, and an administrator at the local hospital were responsible for providing the necessary approval for the use of the revised Bassor HF checklist during the duration of the project. Permission to use the revised version of Basoor's et al. (2013) checklist was received on Tuesday, June 12, 2018, via email correspondence with Dr. Basoor (see Appendix A). Using the Basoor's checklist as a guide, templet, and with input from members of each of the disciplines that participated in the research, Basoor's HF discharge checklist was revised to support the organization and location of this project (see Appendix B). The type of medications the patient had ordered, and any outpatient services and follow-up appointments have been made to help monitor the patient after discharg. The checklist was validated because it

was a revised version of Basoor's checklist, and sections were added to make it more appropriate for the care team that would be using the checklist at the project facility.

A multidisciplinary team effort between, but not limited to, physicians and other providers, a pharmacist, case managers, charge nurses, patient educators, bedside nurses, and physical therapists were used as resources in the development of this customized paper checklist.

Providers. As stakeholders in this checklist, physicians and mid-level providers shared information on how they manage HF patients and which aspects of care are important when treating HF patients. To begin the process of developing the checklist, individualized meetings were set up with the providers of the different specialties, and a sample of the Basoor et al. (2013) checklist was provided. The providers were asked what components they wanted to see on the checklist that were used at the test facility. They either wrote on the checklist itself or verbally provided input, which was written down as potential additions to the final checklist. Their input would form the framework for the HF checklist. Input was received from hospitalists, cardiologists, and the nurse practitioner (NP) that were the nocturnist covering for the hospitalist. The organization is in the process of incorporating NPs as part of the attending providers, and the hospitalists work as their resource. The goal of including this provider group in the development of the checklist was to prepare them for the use of the tool and to increase their buy-in as stakeholders. Because the hospital is a small facility, these providers were likely to oversee the care of the HF patients and prescribed the needed medications and consultations from other specialties.

The NPs that have been recently added as a cohort to the hospitalists also work in the outpatient setting or have recently transferred to the hospital full time from the outpatient setting, so their perspective about what would be helpful for the outpatient follow-up

appointment was valuable. By knowing and understanding the goal for HF patients, the night shift NP can ensure that the patients have been prescribed discharge medications appropriately and that the dosages are effective. During this follow-up, the plan was for the patient's primary care provider, whether it was a NP or a doctor, to consult with out patient Case Management, which are called complex care transition case managers to take over where inpatient case management left off and help the patient with outpatient needs or necessary adjustments in medication dosages. The complex care case managers can also assist with the set up of home health, medical transportation and even medication or skilled care insurance qualification and coverage. Hopitalists and pharmacists work closely together to collaborate on utilizing the correct medication and the proper dosages for optimal outcomes.

Pharmacist. The hospital pharmacists were responsible for making sure that all of the core measure medications are prescribed and were ordered at the optimal dosage. The pharmacists did daily rounds in person with the attending provider and conducts daily chart reviews of prescribed medications and lab results. The review of lab results showed the development of complications as well as the effectiveness of current dosages. The pharmacists were also responsible for reviewing the patient's medications that were prescribed at discharge to make sure that there are no duplicate therapy medications and that the dosages are appropriate for diagnosis and lab values. Pharmacists did not have input on the checklist, but they were made aware of the medications that the providers in this organization use on this patient population. The checklist allowed them to know what medications the patients were prescribed and ensured that the optimal dosage was being prescribed.

Case Management and Palliative Care. These two specialties work closely together because their goals are similar: to develop a plan of care for both the inpatient and the outpatient

setting. They explained in their feedback about the checklist that an outpatient case manager is assigned to these patients. The case managers also expressed the importance of patients' active participation in setting goals and a plan of care and then educating the families about these plans. This method helps patients express their wants and educates everyone who are involved in their care to understand their goals. Having these plans in place is important so providers can proceed even when patients are unable to express their wishes for care and treatment. As part of the care team, case management and palliative care help educate patients and families about services and equipment available and when these services can begin, and they make sure these services and treatments are in place prior to discharge. In addition, the group makes follow-up appointments for the patients to see their providers within five to seven days, which is the critical time frame in which many HF patients return to the hospital due to symptoms. Palliative Care and Case Management works with patients to set up transportation to appointments and timely access to medications. They also investigate such needs as home health services and medical equipment that may assist in ambulation or activities of daily living.

Patient educator. The patient educator, a registered nurse, provided education about heart failure and the importance of medications and a low-sodium diet and arranged a consultation with the dietician that ensured that the patient understood the components of an overall healthy diet. Because of the small size of this facility, there is only one patient educator and she is able to adequately visit and educate with the number of HF patients that are admitted at this facility. Valuable feedback and input were received during a meeting with the patient educator, she provided considerable input about the educational needs for HF patients but also suggested the wording that should be used during the education. She stated that certain buzzwords are used when educating patients because they promote better memory retention. The

educator provided the initial in-depth education for newly diagnosed HF patients about the definition of HF, what exacerbation triggers were and how to manage and monitor weight, and proper diet. This information that the educator stated was important was not used in the checklist, only a verification that the patient received HF education.

Dietician. During the one-on-one meeting with the dietician during the initial phase of revising the checklist, she revealed how she learned about HF patients who have been admitted to the hospital, and how she decided what type of education to provide. Newly diagnosed HF patients are provided with an in-depth education session, and those with a history of HF receive a refresher session. The refresher education is more in-depth if the patient has had a significant weight increase. The dietician receives a printed list every morning of the HF patients in the hospital. This list was generated through the EHR and flagged those patients with HF as part of their diagnosis and whether they are a 30-day readmission. The dietician provided sample food labels for readmitted patients and showed them how to read them to understand sodium content. Because her main focus is on readmitted HF patients, during the education session, she worked to identify barriers that the patient may have in following a heart-healthy diet.

Physical therapy and cardiac rehabilitation. Physical Therapy (PT) staff are included in the care team because research supports maintaining a certain level of activity in HF patients (Węrzynowska-Teodorczyk et al., 2018) and because a few of the key providers thought incorporating PT was important. Providers wanted PT on the treatment team and the checklist because an evaluation of previous physical activity and current activity is compared and used as a diagnostic tool for the attending providers. HF patients recieved cardiac rehabilitation only if they also had a myocardial infarction (MI) causing cardiac injury. Cardiac rehabilitation is a specialized workout plan over a designated time period, monitored by the Rehabilitation

Department, that focuses on strengthening the heart post injury. In contrast, physical therapy includes the evaluation, assessment, and treatment of physical limitations in mobility. PT was willing to do assessments for this population but stressed the importance of making sure the provider ordered the consultation in the EHR, so PT was alerted to the need in a timely manner and had specific instructions for treatment.

Nurses. Bedside nurses and charge nurses for the units in this project described the educational materials available to the nurses and how the nurses used these materials to reeducate or reinforce past education to patients about heart failure. The one-on-one conversations with the charge nurses provided an opportunity to explain the HF checklist and how they assisted nurses to make sure the checklists were used and completed properly. The charge nurses rounded with the providers every day, so they played a key role in communicating with providers about utilizing the checklist and making sure it was kept current until the patient discharges.

Project Plan

This project involved a paper checklist that was initiated at the time of admission for all patients with a diagnosis of heart failure. The checklist was printed on yellow paper to help it stand out from other documents that may be found in the hanging files on each unit. The yellow checklists were in the first file folder labeled HF Checklist. Despite the use of electronic charting, each patient still has a physical file folder that contains patient stickers, forms, or paper notes that are not part of the patient's permanent chart. Not all inpatient units have a unit secretary, so the charge nurse was responsible for obtaining the HF checklist. If there was no charge nurse on duty, the bedside nurse was responsible for starting the HF checklist. The unit director served as another backup to ensure that the checklist was started. Each morning, during

huddle the director reported the number of HF patients admitted to the unit and whether these patients have the HF bundle in use.

Night shift nurses also played an important role in ensuring that the HF checklist was initiated on this patient population. The night shift charge nurse was responsible for performing night shift chart reviews on each patient to ensure that nurses perform and chart their hourly rounding, repositioning and toileting patients, completing safety and pain assessments, and reassessments. At this time, the night shift charge nurse was to confirm that the checklist had been initiated, and if not, start the process. If there were no charge nurses on night shift, the secondary charge nurse or resource nurse was to follow up on HF checklist initiation.

While the charge nurse was to initate the checklist, the bedside nurses held the responsibility for the bulk of the documentation. These nurses were to update information on the checklist as they interacted with the multidisciplinary team members throughout the day. The interdisciplinary team caring for the HF patient was also responsible for reviewing, updating, and communicating changes made to the checklist and ensure that all information was current. Their goal is to develop, modify, and update the plan of care for each patient each day. During the discharge process, the charge nurse was to review the checklist along with the chart review that is done and address discrepancies or follow-up needed before discharge. The discharging nurse was either the charge nurse or the bedside nurse who cared for the patient on the day of discharge.

Project initiation. The process of training for the utilization of the checklist was started with an introduction of the project through an email, unit education, and just-in-time education. I was the primary resource to answer questions or address concerns prior to and throughout checklist usage. Additionally, I was available via email, phone, and on-site rounding on the units

a minimum of three days a week from 7:00 a.m. to 5:00 p.m. and was centrally located in the office of the director of quality and safety. After patients were discharged, the completed checklist was placed in a hanging file folder labeled Discharged HF Checklists located behind the hanging file folder labeled HF Checklists. The discharging nurse ensured that the used checklist was placed in the discharge file folder. I collected the used checklists during the three days a week that I was on-site offering assistance. To protect patient privacy and ensure there were no Health Insurance Portability and Accountability Act (HIPAA) violations, I kept all collected checklists in a locked file cabinet in the office of the director of Quality and Safety. The director and I were the only people with access to the key to this file cabinet. Patient identifiers were on the checklist only while the patient was in the hospital and for 30 days after discharge. The reason for maintaining the patient identifier for 30 days after discharge was for the need to review the checklist if a patient was readmitted. I reviewed each checklist to measure compliance and to address noted deficiencies with the charge nurse and or the nurse that completed the checklist. During any period that I was not on site, the charge nurse reviewed the checklist and addressed any deficientcies to the nurse that discharge the patient. Trends were identified to allow concurrent counseling and education to the nurse by either myself or the chanrge nurse. There was no need for recruitment of a patient population; however, there had to be buy-in from providers and other specialties to participate and utilize the identified tool for this project.

Project education. The providers utilizing the checklist first received notice of the project through an email (see Appendix C). This email was sent three weeks prior to the implementation of the checklist and provided an overview of the details of the project, including face-to-face education. A copy of the checklist was attached to the email so that each specialty

knew what the checklist looked like and the type of information they were responsible for once the project began. Education or training on how to use the checklist began two weeks prior to implementation. If there were any departmental meetings within this time frame, I was added to the agenda; otherwise, I mostly provided one-to-one education by meeting with them in their offices or while they were doing patient rounding. One of the benefits of utilizing this checklist in a small facility is that the group of individuals that needed education was small, making one-on-one education possible. There are five primary care providers that are not hired doctors of this facility that have admitting privileges, so the charge nurse or admitting nurse played an important role introducing the use of the checklist to these medical doctors for the use on the patients they were attending on. When a HF patient was admitted under any of these five providers, the charge nurse or admitting nurse started the checklist and provided real-time education when the provider arrived for the admitting assessment and orders. If any of these five providers were in the hospital when I was providing education or project support, I was able to provide them with any education or assistance on the checklist.

Two weeks before the launch date, I lead a meeting with the nurse directors of the three units in which checklist education wasto be implemented and I included expectations of the nurse's role. This meeting allowed the directors to ask questions and seek clarification on the project specifics. Charge nurses from both day and night shift were given one-on-one education in which they were introduced to the project and informed why the checklist was being used. They all received a copy of the checklist and shown where the blank copies were kept, as well as where to put the used copies. They were told what their role and responsibilities were and had the opportunity to ask questions. The charge nurses were the champions of the checklist because they have constant interaction with the bedside nurses and all of the members of the care team.

The charge nurse was responsible for providing education to the bedside nurses, and daily reminders were given to bedside nurses during care team huddles either by the charge nurse or myself when on site. The nursing directors also reported daily on the use of the checklists during the morning patient flow meetings.

Morning patient flow meetings involved all of the nursing leadership: the president, the chief nursing officer, the director of quality and safety, nursing directors, and the administrative supervisor. The meeting was designed to update everyone on the total number of inpatients, outpatients, surgical and pain clinic patients, potential surgical admissions, and anticipated discharges. Additionally, any staffing concerns or equipment issues were addressed. The meeting was designed to last only 15 minutes and allowed everyone the opportunity to identify situations that may cause patient flow barriers.

Implementation

Upon admission to the inpatient unit, the bedside nurse was to assess that the patient is being admitted for HF exacerbation or find a history of HF and was to obtain the paper form of the checklist from the unit secretary. The nurse placed the patient's sticker on the checklists and was to inform the attending provider that the HF checklist was in use. The nurses were to monitor the checklist during the hospital stay to help ensure completion. The attending provider would then place orders for labs and multidisciplinary services, including but not limited to case management, palliative care, physical therapy, the patient educator, and the dietician. For example, if the dietician was consulted, she would meet with the patient to discuss what a heart-healthy diet is, how to read food labels and sample budget-friendly meals. If physical therapy was consulted, they would assess the patient's mobility and then provide therapy either to help increase mobility or to help the patient maintain their current state of mobility. If a provider

deemed some services unnecessary, then the provider had the responsibility for documenting these exceptions in the patient's EHR. To increase provider compliance by minimizing double charting, the providers and all disciplines did not have to document on the checklist and in the EHR; they were required only to initial the areas on the checklist that they addressed.

Being on-site during the first week to round during the care team's patient huddles, which occur on each unit, was important to assess for any questions or problems and assist anyone who had questions. These care team huddles occurred daily, and the attending provider, case management, pharmacy, physical therapy, and any other person who was part of the interdisciplinary team are present. I would answer questions, if any, and assess how the checklist was being utilized. To provide additional assistance to the nurses and care team, I was on-site throughout the term of the project to address concerns or questions with real-time education. The charge nurses and the nursing directors also served as the unit-specific contact for questions or concerns during this implementation; additionally, they would try to increase compliance with the use of the checklist.

Once the checklist was started, it was available in the patient's hanging file at the nurses' station until the time of discharge, so there was a common location for the checklists. The charge nurse reviewed the checklists for completion daily and informed the bedside nurse of any deficiencies and need for follow-up with providers so that any deficiencies could be addressed immediately. After the patient was discharged, the discharging nurse placed the checklist in a manila envelope that was located in the unit director's office to ensure privacy. I collected the forms throughout the week and stored them in a locked cabinet in the office of the director of quality and safety. Reviewing this checklist assisted in monitoring the potential success of preventing 30-day readmission and providing better outcomes for HF patients.

Outcomes. The objectives of this project were to reduce the rate of 30-day readmissions of HF patients and to achieve initial provider compliance in using the checklist. The use of the checklist was also an effort to improve the overall outcome of this patient population. Specific objectives are:

- Reduction in 30-day readmissions of HF patients by 5% in three months
- Checklist utilization compliance of 80% in one month
- Increase the compliance of checklist use to 85% within three months

Data collection. The purpose of the checklist was to pull together evidence-based HF interventions as a means of potentially decreasing the readmission rate of HF patients at this facility. The checklist was a simple method to help remind providers within the treatment team what interventions should be ordered for the patient to provide an optimal opportunity to reduce readmission and provide a better quality of life. After implementation, any patient readmitted within 30 days with a diagnosis of HF or with a history of HF was cross-referenced with the collected forms to verify that the patient had the HF checklist completed. Completed checklists were reviewed to ensure that all elements of the checklist were addressed, and if not, to make sure the contraindication of such were charted in the patient's EHR. This cross-reference had the potential to provide insight into what may have contributed to the readmission, deficiencies in clinician education, or lack of compliance. New checklists were to be implemented on readmitted patients, and deficiencies from the previous checklist would have been a priority for completion during the readmission hospital stay, with any contraindication of use charted in the EHR. The patient identifier information was removed from the checklist after the patient has been discharged for 30 days because the identifier was needed to locate the patient in the organization's Heart Failure Data Registry. The term of the project was 3 months, starting in

spring 2019. At the end of the project, all checklists were stored in the same locked cabinet for 3 months and then shredded to maintain confidentiality.

Access to the results of this data was to be reported monthly to my mentor, which was also the director of quality and safety so she could track the hospital's progress.

Evaluation. The first objective of this project was to reduce the percentage of 30-day readmissions of HF patients by 5% in 3 months. A measure of sustainability would be monthly monitoring by the organization's analytics team of the decreases in readmissions and an annual comparison of the results. Because I was directly overseeing the project for only 3 months, the results had to be assessed for 30 days after the last date of the use of the checklist during the project phase. Data needed to be collected for a minimum of one month past the project date to assess the goal of preventing a 30-day readmission. If the goal of the project was successful, I would assist with data collection and analysis for another 30-days, during which I would add in the transition of the project to a new process owner.

The second objective was to achieve initial utilization compliance of using the checklist of 80% and then increase to compliance of 85% within 3 months to possibly reach a 90% compliance rate maintained with the use of the checklist. Ideally, the three months would allow the assessment of readmitted HF patients, to determine if the level of completion of the checklist correlated with lower readmission rates.

Sustainability. The sustainability of this project was determined by the feedback provided by the stakeholders. The checklist might need further modifications based on stakeholder use and the needs of patients. If the checklist was seen as an asset and useful in organizing the core measure aspects of HF treatment in one location, that success would encourage its continued use. Sustainability would include transferring the checklist into the EHR.

The first step in this process would be to ensure that all stakeholders utilized the checklist and that all applicable HF patients received the checklist. The success of the project was to be measured by tracking the number of HF patients being readmitted after using the checklist during each HF admission through the data collection system used by the organization. I had planned to follow up monthly for at least six months to track the outcome of the ongoing project and consult with unit directors and the director of quality and safety as needed. The goal throughout the first year of checklist implementation was to achieve minimum compliance of checklist use of 80% and a notable reduction in the readmission of HF patients every fiscal quarter.

Data Analysis

The results of this project were evaluated through a review of the organization's Heart Failure Data Registry, which is maintained by the analytics team. Information on HF patients was pulled from the EHR and placed in the Enterprise Data Warehouse (EDW), where all of the organization's data are placed into tables that utilize ICD-10 diagnosis. The tables display such information as problem lists, ambulatory encounters, and patient origin and disposition. Also, the EDW provides the opportunity to identify other information, such as appointments, medications, and rehospitalizations, and the data can be narrowed to individual hospital-specific information.

The data architects gather the data from the EHR, and this information can be crossed-referenced with this hospital's discharged HF patients. As part of the data review, I looked to verify that all HF patients received the checklist during their stay and the level of completeness. Because of the information that is available in the EDW, tracking HF patients readmitted within 30-days was possible, which means measuring whether the checklist was used in completion or partially, and helping to determine if certain elements were omitted that might have impacted the patient's outcome. After looking to see how many, if any, patients were readmitted after the

implementation of the checklist, the hospital could calculate the percentage of change the checklist made in readmissions. Because this healthcare system is currently in the process of collecting data on HF patients and has a continued interest in improving patient outcomes, data on readmissions continue to be collected after the completion of this project.

Finally, I wanted to determine whether the number of HF patients readmitted within 30 days after the checklist was implemented decreased and whether compliance of completion and utilization of the checklist increased. I reviewed the checklist for completion and possible trends of incomplete areas with the assistance of the director of quality and safety, who was also the mentor for this project, as needed. Access to the EDW is limited to those who have been given access through an application process that is monitored by the Analytics Department. I spent a semester with the analytics department for a clinical rotation, during which time I was granted access to the EDW, and was able to retain my access due to my project.

Institutional Review Board

Approval of the project has been given by the facility where the project was implemented through the Institutional Review Board of the University of Illinois at Chicago. This project does not involve any contact with the HF subjects, but rather a review of the data collected on their disease. This project has been deemed a quality improvement project and not research, and does not fall under the same guidelines as a research project in the sense of patient protection. I am an employee of this facility but not in a capacity where I am in the patient's HER, so I do not see any patient information outside of the scope if the project. (Appendix D)

Chapter III: Organizational and Cost-Effective Analysis

Organizational Assessment

This healthcare system currently treats 25,000 HF patients, and the 30-day mortality rate for those hospitalized patients is above the national median. The national 30-day mortality rate median reported by CMS was 12.1%, with the decile rate of 9.96%, whereas the health system's rates ranged from 12.6% to 15.3% (A. Snyder, personal communication, February 14, 2018). Readmission rates within this organization, at 19.1%, are also above the national average of 18.5%, and administration has stated they are above the benchmark because they are not providing care specific to HF patients; therefore, they support this HF checklist implementation (A. Snyder, personal communication, February 14, 2018). Because of the specifics of this disease, the administration realizes that some elements of care are not being addressed in the HF patient population while they are in the hospital, nor are their special needs addressed after discharge. Some of these elements missing from the organization's care are ensuring follow-up with a provider within five days, phone follow-up within 48 hours of discharge, and continual education on HF. These elements are managed by Case Management in the inpatient setting and the Heart Failure Transitional Care Services in the outpatient setting. Reflecting on the data, administrators are ready to implement changes in how they manage the care of HF patients, in addition to how they treat and maintain their quality of life. They have identified this major problem because it not only does not provide optimal quality of life for the HF patients, but it also affects CMS-qualified reimbursement rates that this healthcare system receives.

Barriers to implementation

This checklist was a tool to help the care team quickly identify whether the patient has the key evidence-based components that must be completed for each HF patient; however, some

of the team members may have forgotten to use the checklist or simply did not recognize its importance. When nurses showed a pattern of not using the checklist, the charge nurses, nursing directors, and I encouraged the use. This was not an anticipated barrier, so the additional encouragement was something that I decided to do to help improve the use of the checklist. Other barriers were anticipated to come from providers who are not employed by the organization, but this ended up not being a problem because the outside provider group stopped seeing their patients when hospitalized and instead, utilized the facilities' hospitalist group.

There was also the possibility that an admitted patient's history of HF was missed, and therefore the checklist was not started, but that was one of the reasons for the directors reviewing their HF printouts that they used daily in patient flow meetings.

Risk. One major constraint was that the hospital may want to implement a plan to decrease readmission but through a method that was only implemented but through methods devided by them. There was a risk that the checklist would not be used or that all identified disciplines would not participate. A barrier to this checklist was that not all providers, hospitalists, or cardiologists would be familiar with the checklist due to infrequent use. Because a low number of HF patients are seen monthly, it is easy to assume that the use of the checklist was not hardwired into practice with the providers; however, the organization is pushing hard to decrease readmission of HF patients in their current daily communication with providers.

A few providers were not willing to change their practice because they did not see a problem with how they have always done things. It was important for the checklist to be included in the medical team's daily rounding with the nurse and charge nurse because there was a risk of the information on the checklist not being verified until the time of discharge, causing a strain and increased workload on the discharge nurses.

Another barrier was that some providers, including nurses, felt inundated with tasks that they believe takes them away from patient care, and this checklist was be viewed as an addition to the list of tasks they are responsible for. Assessments and feedback about the care team's thoughts about the checklist were conducted on an ongoing basis. I asked what they liked and did not like about the checklist, and for suggestions about what could have been done to improve it. I was hoping to receive information on how to increase compliance. All of this information was crucial if the checklist is to become a permanent tool that can be converted to an electronic tool as part of provider documentation to continue the outcomes and decrease the readmission of HF patients.

Interprofessional collaboration, especially during the transition of care before discharge, is important in today's healthcare setting because it improves patient outcomes and effectively reduces unnecessary 30-day readmissions (Boykin, Wright, Stevens & Gardner, 2018). A major role of this team is to communicate with each other to better coordinate care that depends on the experience of each discipline within the team (Boykin et al., 2018). Involving an interprofessional team in the treatment of the HF patient allows for specialties that can positively affect the patient's involvement in care. Patient-centered care provides a real-time flow of information with a quicker resolution of problems and is the center of treatment with interprofessional collaboration (Boykin et al., 2018).

Budgetary Needs

Currently, no notable budget changes were needed. The checklist was in paper form, and the cost of a ream of 500 sheets of yellow paper is $2.90, a minimal expense because of the recorded volume of HF patients for this hospital. Everyone who was involved in the patient's care team was already employed by the hospital, so no new staff was required to carry out this

project. If the checklist achieved its objective in reducing HF readmissions, converting the paper checklist into an electronic format, may incur an additional expense. However, transforming this checklist into electronic form is not a current goal for this project, so no such cost was incurred for project implementation.

Cost savings seen with the reduction of HF readmissions are individualized for each hospital, depending on the number of HF patients treated who live within a healthcare system's treatment area. Patients with HF require more emergency room visits, have repeated readmissions, and usually require longer lengths of stay (Ng et al., 2016). This repeated use of services currently costs the United States $30 billion a year (Ng et al., 2016). This phenomenon is not isolated to the United States; the cost of readmitted patients in the United Kingdom is around 905 million British pounds (Ng et al., 2016). These numbers do not take into account the potential loss of reimbursements that each U.S. facility faced with the introduction of HRRP (CMS, 2019). The checklist can hopefully be an effective tool to help reduce the number of HF patients readmitted, and therefore increase the cost savings of the host facility of this project.

Chapter IV: Results

Outcomes

Analysis of implementation process. *"*After implementation, any patient readmitted within 30 days with a diagnosis of HF or with a history of HF was cross-referenced with the collected forms to verify that the patient had the HF checklist completed*."* The cross-referencing of readmitted patients was not able to be done because there were not enough checklists completed or enough of the EBP interventions implemented to know if the checklist was effective in reducing the number of readmitted HF patients.

Checklist completeness. *"*Further, the level of completeness of the checklist was assessed at discharge and if the patient is readmitted within 30 days." The areas on the checklist that were completed were the areas that could be easily confirmed by the nurses or charge nurse through a chart check or chart review, and those areas were the medications, labs, follow-up services, and diagnostic tools sections.

Medications prescribed?	Yes	No	Dose Modified	Reason if not prescribed/titrated	Initials
Beta blocker					
ACE inhibitor / ARBs					
Aldosterone Antagonist					
Entresto					
Diuretics / Thiazides					
Digoxin (if a-fib or refractory symptom)					
Nitrates					
ASA / Warfarin (if yes, latest INR)					
Hydralazine					
Lipid lowering agents					

Labs	Yes	No	Admission	Discharge		Initials
BNP (on admission and at discharge/30% reduction)						
Lipid Panel						
Renal Panel						
Glucose/A1C						
INR						
Liver Panel						

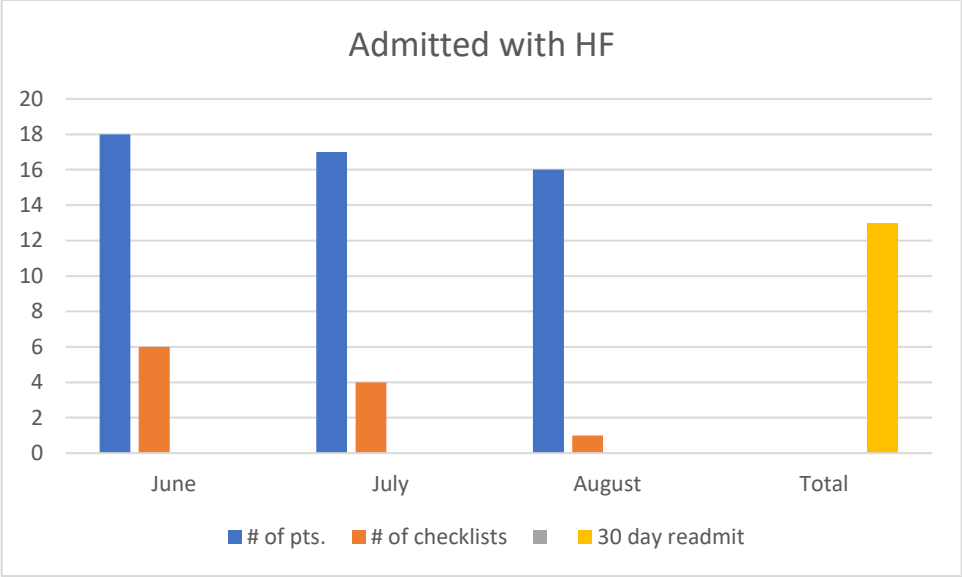
Follow-up services scheduled	Yes	No	**Diagnostic tools**	**Activity Level** Prehospitalization At Discharge
Cardiologist			Echo/EF %	Stairs
Primary Care			HFrEF / HFpEF	# of Feet
Home Health			Compensated	O2 needs
Outpatient care management			CAD / Cardiomyopathy	

*"*Completed checklists were reviewed to ensure that all elements of the checklist were addressed, and if not, to make sure the contraindication of such is charted in the patient's EHR.*"* When reviewing the checklists that were turned in it was noted that the checklist was not being used in its entirety. This was an opportunity for me to re-educate again on the expectations and show an example of what a correctly completed checklist should look like and explaining the importance of participation from all disciplines to help reduce the chance of their HF patient being readmitted.

Regarding readmitted patients. *"*This cross-reference has the potential to provide insight into what may have contributed to the readmission, deficiencies in clinician education, or lack of compliance. New checklists would have been implemented on readmitted patients, and deficiencies from the previous checklist would have been a priority for completion during the

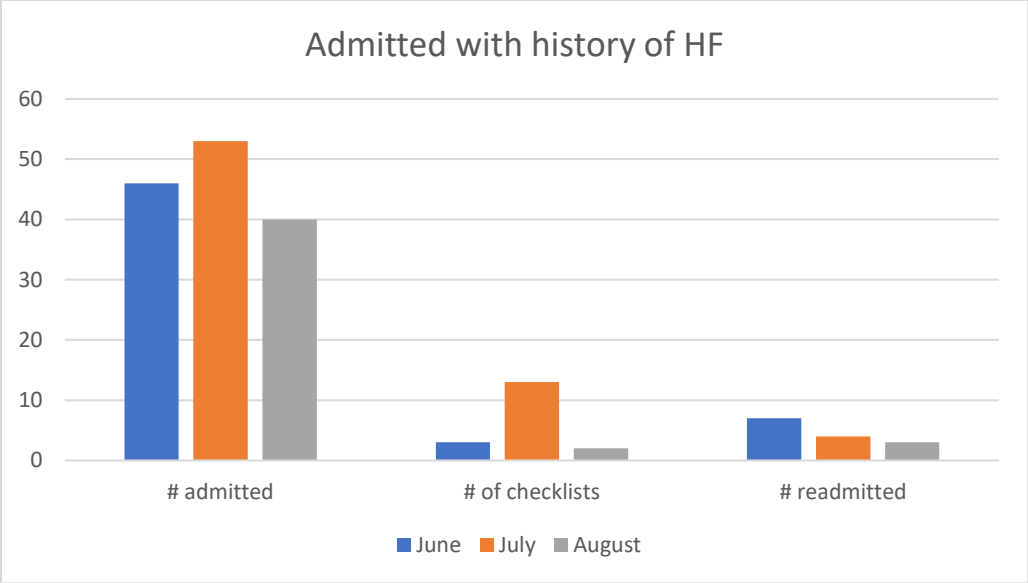
readmission hospital stay, with any contraindication of use charted in the EHR.*"* Being able to cross-reference previous checklists on any HF patients that were readmitted would allow me to identify any EBP interventions that were utilized and suggest to the providers to incorporate those interventions into the current plan of care. Having as many interventions as possible on the HF patient is what helps increase the desired outcome of not being re-admitted within 30 days. No new checklist was started on the 13 HF patients that were readmitted during the project timeframe.

Analysis of outcomes. As the chart showed, during the three-month timeframe of the project, there were a total of 51 patients admitted with the primary diagnosis of HF. In June, the first month of the project, 18 patients were admitted with the diagnosis of HF and of these 18 patients, six checklists were used for a 33% compliance rate. The following month of July saw the admission of 17 patients with the primary diagnosis of HF with four checklists used for a compliance rate of 24%. August saw 16 patients admitted with only 1 checklist used for a compliance rate of 6%. Of these 51 patients, three patients were readmitted within 30 days of discharge with the primary diagnosis of HF and 10 patients readmitted with other diagnoses for a total of 13 readmitted within 30 days.



Project Outcome Analysis

As previously mentioned, there were not a large number of patients expected to be admitted with the primary diagnosis of HF, but this checklist was to follow patients that also had a history of HF. This gave us a larger patient population to use the checklist on and a hope to make a larger impact of decreasing the rate of 30-day readmissions. There was a total of 139 patients admitted with other diagnoses but had a history of HF, 46 in June, 53 July, and 40 in August. The month of June only saw an additional three checklist used and seven patients readmitted at a 7% compliance rate, July saw an additional 13 checklist used and four patients readmitted at a 25% compliance rate, and there were two additional checklists used with five being readmitted at a 5% compliance rate.



HF Outcome Analysis

Objectives reviewed. The overall goal was to have a 5% reduction in HF patients being readmitted within 30-days during a three-month period of the project. If the desired results were achieved, then the plan was to continue the checklist to maintain a low readmission rate in HF patients. When looking at the results obtained from the project, it is really hard to know if the HF checklist made a significant impact on decreasing the readmission rate of patients that either has a primary diagnosis of HF or a history of HF. One of the main reasons it is hard to conclude the effectiveness of the checklist is because there were not enough checklists completed to say that any results were be reliable. There was a goal of achieving an 85% compliance rate of completing checklist on patients with a diagnosis of HF or with a history of HF. The few checklists that were started on the HF patients, were noted to not be completed in its entirety. The checklists that were completed on patients were used as a 'task' list and not as an ongoing working tool from the time the patient was admitted to the time the patient was discharged. There were a few patients that were readmitted that had a checklist started, but because the

checklist was not used correctly it is hard to make a true correlation between any interventions and the cause of readmission.

Chapter V: Discussion

Summary of findings

At the start of this project not only were my mentor and I looking forward to the use and potential outcomes of the HF checklist, but administration and other disciplines were looking forward to participating as well. The feedback and input that I had received before project implementation were positive, surprisingly that energy was not sustained. As expected, there was a lot of one-on-one education and assistance that I provided to the nurses at the start of the project since they were the key players in this project. The charge nurses had a true stake in this project as well, and follow-up with the nurse was important and seemed to be encouraging. The original plan for the HF checklist project was for the nurses to initiate a checklist on all patients that were either admitted for HF or with a history of HF so that they could request for the provider to initiate as many EBP interventions as possible to decrease the patient's chance of being readmitted. Readmission rates of HF patients and checklist use, and compliance was planned to continue to be tracked for at least a year. I presented the project to the three units and both day and night shifts of what the project was and its goal. I reviewed the checklist with all of the nurses and showed them where the checklist would be found in their perspective units and what to do with the checklist when completed. The charge nurses had given feedback on some of the interventions that should be on the checklist, so they only needed to be reminded of the start date and what their role in this project would be. The director could have initiated the HF checklist while collecting the information needed for the daily meeting. Being able to easily

identify HF on a patient was not an anticipated benefit of the checklist, but it could have assisted the directors in keeping track of HF care on the patients on their unit.

In the first month of implementation, I checked daily for HF patients and reminded the nurses what to do when an HF patient is admitted. The charge nurses also reviewed patient diagnoses to identify and HF patients so they could help the nurses start the checklists as well. The first month started slowly, which was somewhat expected, but unfortunately, the lack of participation did not significantly improve over the three-month project period. As the nurses became more familiar with the fact that the project had started, and I offered education and reminders and the nurses would state that they would start the HF checklist later. During the first month of implementation, I was available on-site a minimum of three days monitoring the number of patients admitted with HF or admitted patients with a history of HF. To assist the nurse with one-on-one education as patients were admitted, I would sit with the patient's nurse at the time of admission and walk the nurse through the process of how to use the checklist. At the start of the project, I also reminded the providers, pharmacists, the dietician, and other care team members of the start of the project what their role would be once they were consulted on the HF patient. During my weekly follow-ups after implementation, I would check the HF checklist discharge folder for completed checklists and I met with the charge nurses and the bedside nurses to assess the ease of use, any barriers to using the checklist, and tools that they may need to help the use the checklist. The charge nurses would comment that the nurses had either forgetten to use the checklist, even after being reminded, or they would not take the time to use it. The nurses would say they kept forgetting about the project or could not remember what they

were supposed to do with the checklist. I would re-educate the nurses and continue to encourage the charge nurses and the unit directors to remind and offer assistance to the nurses.

In the second month of the project, I was not available as much because I was out of town. Knowing that I would not be available to answer questions I met with the charge nurses as well as the directors to let them know of my limited availability and to encourage them to keep the nurses engaged. In the last month of the project, I did more one-on-one on the spot education to assist nurses though the use of the checklist. I also used report sheets provided by the unit directors to identify any inpatients that did not have a checklist and helped the nurses start the checklist. I would later find that the checklists were not completed or in some cases not used at all. I had a few providers ask me if what was expected of them was being provided, and I explained the goal was to consult other disciplines to maximize care of the HF patient. It was noted that hospitalists would consult cardiology or case management at times, but it was not because of the checklist but rather because it was their routine of care for their patients. The dietician also reached out to verify that she was not missing her part in the project because she noticed she had not received any consults. When I was available to assist nurses with the checklist, they stated how they used the checklist to mark off the medications that the patient had and then would put the checklist in the HF discharge folder. This was the opportunity to explain that the checklist was to be used from the time the patient was admitted until discharge. This checklist was a means to do as much as possible for the patient to see if our interventions would assist in decreasing readmissions. The patient educator stated that she noticed she was finding

HF patients on her daily HF reports, that she had not been consulted on to provide the patient with HF education.

I found that the biggest modification needed was a constant reminder that the checklist was a working document that was meant to be used during the patient's entire hospitalization and not just as a form to only check the boxes and then turn in. I had to remind the nurses that if they were to notice an intervention not addressed, then they should speak with the provider to ask for those missing interventions. One lesson learned from the implementation process was that despite having the nurses provide input on the development of the HF checklist, it didn't ensure that they were going to consistently use the checklist. There were only two directors that managed the three units where the checklist was implemented, but because of their other duties their ability to ensure the checklists were being utilized was limited. This facility is not large enough to have discharge planners, this is left for the case manager so they would not be responsible for reviewing the checklists prior to the patient discharging. Case management focuses on ensuring insurance authorization is obtained for services that continue after discharge as well as ordering any medical equipment that's needed post discharge. The case manager group is alo responsible for securing home health services, nursing home placement, as well making sure the attending provider has placed the correct orders in the patients' EHR to cover the cost for any transition care that was needed in the outpatient setting. With these responsibility having case management add reviewing the HF checklist would not be practical.

Checklist. The areas most likely to be completed were the medications, labs, follow-up services, and diagnostic tools sections. Since nurses could quickly and easily check the box of yes or no is why I believe these were the only sections of the checklist that were completed. Within the completed sections there were only checkmarks in the yes or no columns and the EF

percentage number that was documented in the EHR was written in, but none, 0%, of the activity level or education sections were completed nor any other comments in the discharge sections.

When I spoke with the charge nurses they stated that they were the ones that did most of the checklists because they couldn't get the nurses to use the checklist, the charge nurses also believed that bedside nurses never made an effort to complete the checklist because they are so accustomed to the charge nurses doing a lot of non-direct patient care for them and not holding them accountable to provide a more comprehensive patient care. Some of the bedside nurses did state that the charge nurse was going to take care of the checklist for them, so this supported what the charge nurses reported to me.

A lot of the failure that occurred with the complete use of the checklist is because the nurses had the majority of the responsibility to ensure the use and completeness of the checklist. A better approach would have been to hold each member of the interdisciplinary team responsible for their own section of the checklist, and not have their participation dependent on a consult order or request from another member of the care team. As a leader responsible for process change, it is very important to identify what needs to change, who participates in the change, and give guidelines on expectations of everyone's role in the change. By giving clear goals and responsibilities, it allows an easier assessment of progress that is being made and areas or participants that need improvement. Defined roles also give ownership and individual accountability, which would help the leader know who needed assistance to improve their participation and increase the chances of success for the individual and the process change as a whole. Being able to individualize the approach of educating each team member is a key component of being a successful leader and improving the success of any project, it is that old adage 'know your audience'.

Limitations

One limitation of this project would be the low number of checklists completed and completed correctly, which limits the ability to state that the results were reliable. Another limitation is the fact that all of the members of the intended users did not utilize the checklist because they were not consulted on the HF patients. The collaboration between nurses and the hospitalists or nurse practitioners did not occur to ensure the optimal use of EBP interventions for this patient population to help improve their outcomes and decrease their chance of being readmitted within 30 days.

Within the process of setting up my project and preparing to present the project idea to administration, the ministry as an organization, started to focus on the HF patient population and was developing practice changes that were to start simultaneously systemwide. I attended some of those educational and inforational meetings about the changes to find out if any of these practice changes were the same as my project, and to see if my project topic and implementation was in jeopardy. During this time I kept in close communication with my project mentor to make sure we felt my project was still viable and because we felt my project had the potential to be incorporated as a useful tool to help the ministry to achieve their goals, we both decided to continue with my original project. The problem I faced with this ministry change, was that many of the nurses didn't have an understanding that my project was a separate project from the changes being made throughout the ministry.

When applying to the Inetrnal Review Board (IRB) for project approval and given the go ahead to start my project, there was confusion on the IRB side of things as to what information and data would need to be collected to conduct my project. The IRB was under the misunderstand that I would have to conduct chart reviews of each patient's chart to gain the

information I needed which would place my project in the category of a research project, so they were not granting approval and was requiring that I stay away from patient information. If my project were a research project, it would have required a lot more paperwork, explanation, and measures to project the HF patients in the project. With the assistance of my mentor and the president of the facility, I was able to assure the IRB that I didn not need to review any chart information and that what I needed could be obtained through a limited data set with medical record numbers and data currently being collected by the ministry's analytics department. Although the analytics department collects more information like demographics, insurance information, home address, etc.. I did not need any of this information and was able to review diagnosis and readmission dates without looking at anoyt other information, I also would not have any contact or interaction with the patient. This misunderstanding caused a delay in the start of my project but once everything was cleared up, I was finally granted permission to start my project and was told my project was a quality improvement project and not a research project.

There was one other major fact that created a limitation in the implementation and success of my project and that was that some nurses often confused my HF checklist with an old HF compliance form that had been used recently at the facility. The nurses that confused my checklist with the complince form thought my checklist was replacing the compliance form that they knew where being phased out. This misunderstanding was evident because I received a few of the old compliance forms in the HF checklist folder that was being used for my checklists. When speaking with the nurses who had used the old compliance forms, they mentioned how they did not realize that my checklist was not used the same way. This confusion also explained some of the resistance in the use of my checklist because some of the nurses thought my form was to be used in addition to the old compliance for, and felt that it was additional work. Some

even thought that my checklist was more work because it was longer than the old compliance form, and these nurse were under the understanding that required work on the HF patient was supposed to be getting easier and not longer.

I have implemented process improvements or quality improvements at this facility before and they have all been successful, so when I was faced with the challenges of this project I did not understand why. One of the quality improvement changes made was to change baseline telemetry settings at the main monitor room to reduce the number of false alarms and therefore reducing alarm fatigue. I made a process change on equipment used during a code situation in the emergency room. I educated emergency room staff on the importance of measuring the effectiveness of code interventions by monitoring end-tidal C02, and the ER started using nasal cannulas that had the capability of measuring C02. Another change was the introduction of aromatherapy patches used throughout the hospital as a means of reducing as needed medications which included narcotics. The aromatherapy patches have been used for nausea, headaches, pain, and reducing anxiety and this intervention has been successfully used in all areas of the hospital. When looking at why those processes and quality improvement changes were successful versus this HF checklist project that had a low participation and success rate, I realized the one difference was the level at which I introduced the projects. All of these past project ideas were introduced to either administration or on a leadership level like to a director and I was responsible for research, education, and the implementation process. The introduction of these process changes was to nurses with master's degrees and higher, and some of these nurses were also certified in their specialty areas. The idea of the HF checklist was introduced to administration and leadership, but the bedside nurses were responsible for implementation. Having a background of working in a Magnet hospital, where the majority of the bedside nurses

are BSN prepared and higher and where the implementation of EBP through nurse-led projects were common and expected, this HF checklist project was being implemented in a non-Magnet facility where the nurses are ADN prepared. All of these factors have been shown to support a different type of nursing care, and I discuss the research that supports this.

It has been shown that nurses that work at facilities that have been certified as a Magnet or Pathway for Excellence facility, report fewer barriers to EBP than non-designated facilities (Wilson et al., 2015). The study by Wilson et al. (2015) also showed how nurses educated at the baccalaureate level or higher had fewer barriers to EBP than nurses with less education. The American Nurses Credentialing Center (ANCC) has developed a framework the states how a facility can become designated as a Magnet or Pathway for Excellence Center, and one of the main requirements is for nurses to engage and incorporate EBP (ANCC, 2014). Research has been linked to improved quality and safety outcomes (Wilson et al., 2015). The majority of the nurses at the study facility are trained through an associate degree nursing program at the local junior college.

There is also a positive impact on accountability, personal and professional experiences when nurses have a specialty board certification (Schroeter, Byrne, Klink, Beier, & McAndrew, 2012). Nurses improve their knowledge base, clinical judgment, professionalism, and communication skills when they maintain certification (Schroeter et al., 2012). The research by Schroeter et al. (2012) found that 40 percent of nurses that had been certified for 5 years or less believed that their certification improved their confidence in detecting and intervening in complications when delivering nursing care. With an increase in certification, nurses had more control over their practice and autonomy, and better communication and collaboration (Schroeter et al., 2012). These same nurses also had more of a sense of empowerment.

All of these comparisons between Magnet and certified nurses versus non-certified nurses not working at a Magnet facility is to acknowledge the limitations noted in the project facility. Nurses did not work autonomously within their scope of practice to suggest the use of the interventions that were suggested and centrally located for ease on the HF checklist. The project facility nurses did not see themselves as an integral part of the patient care team that could positively impact patient outcomes, but possibly just as the nurse that needed a provider's orders. Certified nurses have expressed an increase in their credibility as a professional and this credibility improves their position at the table when advocating for patients (Schroeter, 2012).

Implications

After this project, it is unclear what impact has or can occur from the results of the HF checklist project and whether the HF checklist is sustainable even after process changes. The checklist may have to be a process change that is incorporated into the HF changes that are currently being implemented system-wide through the organization with the guidelines of usage determined by them. The plan, if there was a decrease in the number of HF patients readmitted within a 30-day timeframe, was to have the HF checklist changed into an electronic form to be added to the facilities' electronic charting system. Having the checklist as part of the EHR would have been a way to make this new process of treating HF patients more streamline with the EBP interventions readily accessable with current practice methods.

Future research. At this point, a future project focus at this facility could be to help the nurses become more autonomous and forward-thinking in the care for their patients. Teaching and empowering nurses to be more than task-oriented professionals and to realize their importance on how to can impact change for their patients would make more of a positive impact on patient outcomes than anything. Nurse led changes are easier to implement as more of these

nurses obtain their bachelor's degrees and higher because they have the training to think in a manner that encourages problem-solving while becoming autonomous in their roles. A future research project on how to assess nurse readiness for change and how to prepare nurses for change is something that can also be considered in the future. This type of project could be given to the nurse clinical practice group within this medical facility and this gives those nurses ownership to the results that can then be presented to the organization's main nurse clinical practice group as a way to assess other facilities' readiness for future change processes.

Nursing. This project would have been very impactful for setting the standards for patient care in the HF population that was led by bedside nurses. The nurses could have shown how they were being proactive by ensuring that their HF patients were receiving comprehensive EBP interventions. This could have helped further develop the nurse-provider relationship that would improve on communication and cementing nurses as an integral part of the patient care team outside of a more familiar task-oriented patient care. Advanced Practice Nurses (APN) are new to this organization within the hospital setting and they are leading the way in advancing the role of nurses. As the role of APNs becomes more familiar and utilized within the facility, the floor nurses may see opportunity and this can potentially lead to a more upward mobility and educational movement of nurses, placing them on all levels of patient care. This placed advanced degreed nurses in multiple rolls from the bedside to administration, and as this occurs it is hopeful that the forward thinking and interaction of these nurses improves.

Health policy. The relevance of this project in regard to the policy could be for the nurses to start looking at developing standing order protocols that allows nurses to have more autonomy in the care they are allowed to provide. The standing orders gives the nurse the opportunity to use critical thinking during the daily care of their patients and safely give them

guidance in their practice before the need to contact a provider for further treatment options is needed. Standing order protocols are presented to providers for their approval prior to becoming policy and it allows the nurses to practice at the top of their license, and it also allows the providers more time to concentrate on the more critical patients which has the potential of an overall improved outcome for all patients within the facility because it may reduce delay in care.

Chapter VI: Conclusion

Overall, I believe that with more time it may be possible to get the nurses at this facility to a point where they can be more interactive with the patient care team than they currently are. I looked at the readiness of the organization and facility for change in the treatment of HF patients, but I did not look at the readiness of the bedside nurses in the role they would play in this project. From a nursing culture change, the nurses can move into the role of agents that not only actively participate in developing projects for change but also support other projects that are intended to improve patient outcomes.

The DNP Essentials that this projected intended to impact was Essential I: Scientific underpinnings for practice because the HF checklist utilized EBP interventions to improve patient outcomes, Essential II: addresses Organizational and systems leadership for quality improvement and systems thinking because this project was trying to implement a process change in the care of HF patients within the selected institution (AACN, 2006). This change in the treatment process would have been a new way of thinking about the care of HF patients by changing the system's approach to all HF patients regardless of their admitting diagnosis. DNP Essential IV was also being utilized by pulling data for the organization's data warehouse to track the number of HF patients being admitted during the project time frame as well if they were readmitted within 30 days of their discharge (AACN, 2006). Utilizing the EHR also helped meet this essential because pertinent information that was recommended on the checklist could be found and tracked within the electronic charting system. The project would have affected DNP Essential VI (AACN, 2006) as well, because the goal was to utilize an interdisciplinary team to treat the HF patient to improve their outcomes and decrease their 30-day readmission rate.

Having made presentations in the past both verbal and as a poster, I was looking forward to the outcomes of this project. It was upsetting to not have the participation that I wanted and expected, especially with the one-on-one education I provided often to the nurses, so I originally thought there would not be an opportunity to do any future presentations on my results. I have come to realize that there are still opportunities to do another project on process change or process improvements that can incorporate lessons learned for this project and discuss how the failure of this project led me to a new research project. There was no way for me to know that the providers not primary to the facility would no longer admit and care for their in the test facility. It was also unseen that the facilities' providers would be at a point where they would begin to push back against administration about the treatment plan of their patients, specifically HF patients. There was also a change in the daily patient rounding, and providers did not participate because they felt they were not told about the change. What was interesting is that the providers used evidence to support them not participating in the new form of daily rounding. All of this could have contributed to the overall outcome of my project regarding the lack of participation, but at this point, it would be hard to come to that conclusion.

Lessons Learned

When starting a project, it is very important to analyze if participants are ready for their role in the upcoming project. The organization, the facility, administration, and members of different disciplinary teams were ready to participate and ready for change, but one of the main components of the project was not ready to participate in the manner necessary to have effective participation and results.

If I were to do this project over again, I would educate the providers and the other members of the multidisciplinary team about all of the EBP interventions for HF patients. I

would explain that the goal was to provide the patient with as many interventions as possible with the goal of reducing the rate of 30-day readmissions in this population. I would also provide education on the importance of each of their roles to the project and the HF patients and explain my expectations of them. From there, I would work with IT/Analytics to develop a HF banner that would appear at the top of the patient's EHR to show an admitting diagnosis of HF or a history of HF. With the banner, I would have a HF order set that would automatically populate on the screen and all of the elements I had on my paper checklist would be in an order set format for the provider to click the interventions they wanted. Any of the interventions that need other disciplines would automatically send a consult order to the respective departments and when a provider from that department signed on to the patient's EHR, a dialogue box with smart phrase text options would appear for that provider to make their treatment notes after providing HF specific interventions to that patient. These dialogue boxes and order sets would continue to populate for each discipline until they addressed what was needed for the HF patient. By providing unavoidable order sets and dialogue smart phrase boxes that continue to populate until the electronic checklist is addressed would have helped ensure all members of the care team actively participated in the project. Also, by having the checklist in an electronic form would help compliance in the use of the HF interventions, which could provide a more reliable outcome when analyzing the post-project data.

Overall, I would say that this DNP project has been one of the biggest eye-opening activities I've experienced in my nursing career both as an educator and as a nursing leader. One of the biggest assessments that were needed before implementing my project never occurred to me until I started the process of writing up the results. It was very important to assess all of the participants' readiness and ability to participate in this project, and I never considered the

readiness of the biggest component and that was the level of readiness of the facility's bedside nurses to actively participate. Although my overall goal was not obtained through a successful project outcome, this was a good learning opportunity to recognize the importance of the role of a leader during a process change and how plans may have to be adjusted. Reaching this point in my education was something that I never considered was possible for me to achieve, so having the opportunity is humbling.

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Appendix A

Email Authorization of Use

From: "Abhijeet S. Basoor" <abhijeet.basoor@marylanning.org>

To: "Glynna K. McKenzie" <glynna.mckenzie@marylanning.org>

Sent: Tuesday, June 12, 2018 10:47:32 PM

Subject: Re: Heart Failure Checklist: Dr. Basoor

They can use my checklist for their project

Thanks

Sent from my iPhone

Appendix B

Heart Failure Checklist

Heart Failure Checklist Attending: _____ Consults: _____ New Dx_____Exacerbation_____Hx_____Readmit_____	Place Patient Sticker here

Medications prescribed?	Yes	No	Dose Modified	Reason if not prescribed/titrated	Initials
Beta blocker					
ACE inhibitor / ARBs					
Aldosterone Antagonist					
Entresto					
Diuretics / Thiazides					
Digoxin (if a-fib or refractory symptom)					
Nitrates					
ASA / Warfarin (if yes, latest INR)					
Hydralazine					
Lipid lowering agents					

Labs	Yes	No	Admission	Discharge		Initials
BNP (on admission and at discharge/30% reduction)						
Lipid Panel						
Renal Panel						
Glucose/A1C						
INR						
Liver Panel						

Education/Interventions measures addressed?	Yes	No	Comments	Initials
General risk modification/Smoking cessation				
Treatment & adherence				
Triggers: alcohol, stress, thyroid disorder				
Obesity (BMI)/Diabetes				
Infection prevention				
Heart failure monitoring: diet, daily weight, fluid restriction				
Blood pressure control				
Cholesterol control				
Palliative care				
Case management				
Dietician/nutritionist				
Heart Healthy Diet Plans				
PT/OT				

Follow-up services scheduled	Yes	No	**Diagnostic tools**	**Activity Level** Prehospitalization At Discharge
Cardiologist			Echo/EF %	Stairs
Primary Care			HFrEF / HFpEF	# of Feet
Home Health			Compensated	O2 needs
Outpatient care management			CAD / Cardiomyopathy	

Signature/Initials_____ Date_____

Signature/Initials_____ Date_____

Signature/Initials_____ Date_____

Appendix C

Provider Project Introduction Email

Dear Providers and Care Team,

As many of you may know, I am completing my DNP through Bradley University. For my scholarly project, I have developed an adapted evidence-based checklist with the permission of several stakeholders. These stakeholders are: doctors, dieticians, physical therapists, pharmacists, case managers, palliative care, charge nurses, nursing directors, the Chief Nursing Officer, the Director of Quality and Safety, the Medical Director, and the patient educator, to be used on any patient that is being admitted with a diagnosis of heart failure or has a history of heart failure. Research has shown that certain treatment practices improve the outcomes of this patient population and reduce their readmission rates. Many of you have assisted me on what should be on the checklist and why it is important for those elements to be included. The checklist will be introduced upon admission and will be available during the duration of their hospitalization. Your role will be to sign off on the elements that you address, and for any intervention that you are not addressing, you will sign off that it is contraindicated. Your current documentation in EPIC will not change and will still be required. The purpose of using the checklist is to provide a central location of all of the evidence-based interventions. I will be tracking this patient population to see if the checklist helps you address all of the needed interventions, and if these interventions help reduce 30-day readmissions. Face-to-face education will be provided approximately two weeks prior to implementation to provide more detail and training on how to use the checklist. I will be available during the first couple of weeks that the checklist is rolled out (spring dates will be provided when finalized) and will always be available throughout the 3-month duration of the project to answer any questions through email. The

charge nurse and the directors will also act as resources if you need immediate assistance and I am not available. Please do not hesitate to reach out to me if there is anything I can help you with. Please find a copy of the checklist attached so you can review and know what type of interventions will be part of this project.

Thank you,

Mychell G. Zepeda

mychell.g.zepeda@osfhealthcare.org

Appendix D

IRB Approval Letter

Peoria Institutional Review Board
One Illini Drive
Peoria, Illinois 61605

FWA 00005172

IRB #00000688
IRB #00000689

DATE:	April 30, 2019
TO:	Mychell Zepeda, MSN
FROM:	University of Illinois College of Medicine at Peoria IRB 1
STUDY TITLE:	[1398463-1] Implementation of a Heart Failure Checklist to Reduce Readmissions
IRB REFERENCE #:	
SUBMISSION TYPE:	New Project
ACTION:	DETERMINATION OF NOT RESEARCH
DECISION DATE:	April 30, 2019

Thank you for your submission of New Project materials for this research study. University of Illinois College of Medicine at Peoria IRB 1 has determined this project does not meet the definition of research under the purview of the IRB according to federal regulations.

We will put a copy of this correspondence on file in our office.

If you have any questions, please contact Mindy Reeter at 309 680 8631 or mreeter@uic.edu. Please include your study title and reference number in all correspondence with this office.

cc: