Effectiveness of Self-Management Interventions in Congestive Heart Failure Patients

By

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Abstract

Congestive heart failure is a complex clinical condition which requires precise self-management interventions to reduce the risk of morbidity and mortality. Many patients diagnosed with congestive heart failure find it difficult to manage their symptoms, which can consequently lead to multiple emergency department visits and hospital admissions. This program implemented increased assistance in monitoring such symptoms in hopes of preventing hospital admissions and reducing hospital readmission rates. Five participants met the criteria for inclusion in this program and were closely monitored in regards to their daily weight, fluid and sodium intake, and medication compliance. Of the data collected, it was found that while three program participants excelled at monitoring their symptoms and implementing self-management interventions, one participant was not as cooperative nor compliant, and the final participant had already implemented such self-management interventions in their daily routine. In the future, a large sample size would be more beneficial for data collection and analysis. The findings from this program can be implemented in the inpatient or outpatient setting to provide further education to patients with the diagnosis of congestive heart failure.

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Chapter I: Introduction

Congestive heart failure is a complex clinical syndrome where a structural or functional cardiac disorder prevents the ventricle(s) from effectively filling and ejecting blood (Heart Failure, 2017; Pazos-Lopez, et al., 2011). In the year 2012, it was estimated that 5.8 million Americans, age 18 and older, were living with congestive heart failure; 60% of these patients are age 65 or older (Zohrabian, Kapp & Simoes, 2018). Due to this large population, $3.3 trillion was spent on congestive heart failure patients in 2016, making congestive heart failure the 6th most expensive condition treated in hospitals (Zohrabian et al., 2018). Of patients diagnosed, 83% are hospitalized once in their lifetime and 43% are hospitalized up to four times (Zohrabian et al., 2018).

Proper disease management may relieve symptoms, prevent hospitalization or improve survival, but may also affect the patient's health-related quality of life (Baert, 2018). The gold-standard of congestive heart failure self-management is maintaining clinical stability through daily activities (Toukhasti, Driscoll and Hare, 2015). This project topic was chosen to evaluate the impact of self-management interventions for patients in rural communities with a diagnosis of congestive heart failure. The goal of this project is to reduce overall readmission rates of congestive heart failure patients, improve patient outcomes, and lower health care costs.

Background and Significance

Congestive heart failure has become a major challenge of the public health system, which at times can be a life-threatening emergency requiring treatment (Jackson et al., 2018; Steimle, 2007; Ural et al., 2016). One in five patients will develop congestive heart failure, and despite

advances in treatment, the morbidity and mortality rates remain high for the condition; almost half of congestive heart failure patients die within five years of diagnosis and a reported 300,000 deaths occur annually (Audureau et al., 2018; Steimle, 2007; Abbasi, Ghezeljeh and Farahani, 2018). Congestive heart failure is most commonly caused by coronary artery disease; however, the condition can also precipitate in patients who have uncontrolled diabetes or hypertension and patients who smoke or are obese, consequently leading to pulmonary congestion, peripheral edema, and cardiac strain. As the average age of patients with congestive heart failure continues to rise, so does the number of patients presenting to the emergency department for symptom management; lengthy and numerous hospitalizations, intensive medical treatments and expensive interventions in order to reduce mortality lead to high costs in the treatment of congestive heart failure (Ural et al., 2016).

The impact that congestive heart failure can have on a patient's life is substantial and requires close monitoring and patient participation (Iyngkaran, Toukhsati, Harris, Connors, Kangaharan, Ilton et al., 2016; Jonkman et al., 2016). Patients are expected to adhere to complicated medication regimes, lifestyle modifications such as dietary and fluid restrictions, and monitoring for signs and symptoms of congestive heart failure exacerbations; for example, dietary sodium restriction is recommended by international guidelines, but research conducted by Audureau et al. (2018) determined that less than half of congestive heart failure patients follow these recommendations. According to Jonkman et al. (2016), there has been an increased interest in the self-management of congestive heart failure that focuses on improving the patient's knowledge and skills to manage the condition. Prognosis of the condition weighs heavily on both physicians, who monitor the effects of congestive heart failure and communicate information to the patient, and patients, for which the concept of self-management is focused; patients are

motivated to comply with diagnostic and therapeutic recommendations (Herber, Atkins, Stork, and Wilm, 2018). Herber et al. (2018) recommend that a multidisciplinary team provide the patient with emotional, physical, intellectual and social resources to increase their compliance with medication regimes and lifestyle modifications, as well as on how to monitor for signs and symptoms of exacerbations of the condition.

Of the patients discharged from a health care facility, data collected from the Center for Disease Control and Prevention (2016) shows that 60% of the population age 65 years and older are discharged back to their own homes. With such a large percentage of this population returning home, and the large amount of monetary congestive heart failure costs, close monitoring is needed of these patients to assess their condition so that medical attention and self-management can be provided in the home setting or primary care provider's office before hospital readmission is needed (Ware, Ross, Cafazzo, Laporte & Seto, 2018). Therefore, it is important for patients to be educated on self-management techniques and be aware of the worsening manifestations of congestive heart failure.

Needs Assessment

Data collected by the Center for Disease Prevention and Control (2016) from 2013 to 2015 identified that in Livingston County, Missouri an average of 12 people per 1,000 were admitted to the hospital due to congestive heart failure and once discharged from the hospital, 57.7% of these patients were discharged home. In addition, an estimated 213.1 patients per 100,000 died with congestive heart failure as a contributing factor. According to Ms. Adkins, the utilization review manager and Readmission Review Committee leader at the project site, 31 patients during the year 2017 were readmitted to the hospital, with six of these readmissions due to congestive heart failure (Personal communication, December 5, 2018).

In the state of Missouri, the heart failure hospitalization rate per 1,000 was 37.3, with 56.2% of these patients being discharged home (Center for Disease Prevention and Control, 2016). The heart failure death rate per 100,000 was estimated to be 186.2 (Center for Disease Prevention and Control, 2016). Comparable to the state of Missouri, the national average of heart failure hospitalizations per 1,000 was 34, with 57.1% of these patients being discharged home, and 168.6 per 100,000 patients died with congestive heart failure as a contributing factor (Center for Disease Prevention and Control, 2016). In Livingston County, Missouri, 4.4% of patients died before hospital discharge, comparable to the state of Missouri and the national ages of 4.9% and 4.8%, respectfully (Center for Disease Prevention and Control, 2016). A study conducted by Smith et al. (2015), found that up to 80% of congestive health care costs was due to hospitalizations; on average 18% of patients were readmitted within 30 days, 50% of patients were readmitted within 60 days, and 60% of patients were readmitted within 90 days.

Utilizing the SWOT analysis (See Appendix H), internal and external factors were taken into consideration when determining if this project could be implemented in the outpatient setting. One of the internal strengths of the project included the interests and support of managers. The project has been presented to managers of the medical/surgical unit, intensive care unit, social work department, utilization review department, and the education department. Each manager is a member of the Transition of Care and the Readmission Review committees, which focus on transitioning the care of the patient back to the primary care provider after discharge and reviewing hospital readmissions to determine the possible cause and preventive interventions. Each has expressed interest in the topic and offered resources to see the project through.

A second internal strength was the large patient population that would benefit from this project, which uses evidence-based methods to determine and monitor self-management interventions for patients. This critical access hospital is located in a rural community where patients can receive help in managing their congestive heart failure closer to home, rather than having to commute to the metro facility for the same services.

The first internal weakness identified by the SWOT analysis was the lack of compliance by patients even with close follow up and monitoring. When speaking with the manager of the local health department, there was concern expressed about the failure of patients to participate in post-discharge education. Patients would need to be seen sooner by their primary care provider after discharge, and some patients may require daily telephone conversations to monitor weights, medication compliance, and dietary intake. The second internal weakness was the failure to reach the patient after hospital discharge, which would not allow for close monitoring of self-management interventions. The third weakness identified was in regards to the doctoral student, the team lead, being able to effectively communicate patient needs and concerns to the primary care provider due to lack of participation by the provider. The project was carried out in the setting of the primary care physicians group, which reduced the risk for lack of communication as the team lead can work closely with the primary care provider.

An external opportunity identified by the SWOT analysis would be to increase the number of patients participating in the program, as well as appropriate patient compliance. To accomplish this task, the team lead would need to work closely with social services and the hospitalist group to identify patients that would benefit from the program. Also, by providing the program to congestive heart failure patients, a reduction in the number of hospital readmissions

where congestive heart failure is the admitting diagnosis would decrease. Most importantly, reduction in patient mortality due to congestive heart failure complications would be seen.

The inability to contact the patient after discharge and/or poor follow up phone calls with patients, where the need to seek proper medical attention is not determined, was identified as an external threat. The inability to properly monitor self-management interventions would prevent the project from being successful and would fail to reduce hospital readmissions and patient mortality. Insufficient time and funds for the project to be properly implemented is another external threat identified. Finally, if participation in the program is low, there may not be enough data to validate the need to employ someone in the team lead position and carry out the tasks of the program, which is identified as an additional threat to the success of the project.

Problem Statement

The failure of patient self-management interventions in regards to congestive heart failure can lead to increased patient mortality, increased hospital readmission rates, and increased healthcare costs (Lycholip, Aamodt, Lie, Šimbelytė, Puronaitė, Hillege et al., 2018; Ural et al., 2016). The assistance in self-management interventions from a trained health care professional is immensely needed to reduce patient mortality, decrease hospital readmission rates, and decrease healthcare costs.

Purpose

The project involved the inpatient multidisciplinary team to identify patients who have been diagnosed with congestive heart failure and who would benefit from a health care provider monitoring the self-management of the condition once the patient is discharged from the hospital. Patients that fail to properly self-manage their congestive heart failure account for half

of the hospital readmissions related to the condition (Do, Young, Barnason and Tran, 2015). The project intended to reduce patient mortality, decrease hospital readmission rates, and decrease healthcare costs by educating and collaborating with patients to improve self-management of congestive heart failure in the community.

The project also involved a health care provider that was responsible for explaining the program objectives to patients who are identified by the interdisciplinary team, monitoring their progress throughout their inpatient stay, providing follow up conversations once the patient was discharged, and communicating with the primary care provider if a concern arises. Once the patient was discharged from the hospital, the healthcare provider provided a follow up phone call to reiterate discharge instructions regarding congestive heart failure and the self-management required.

Self-management requirements include the following:

1. Weighing each morning, before breakfast and after urinating, wearing the same amount of clothing (or no clothing) and utilizing the same scale; some patients may need a daily reminder to obtain their weight while others may require a weekly follow up phone conversation.
2. Recording daily weights to be reviewed at the next follow up phone conversation; if a concerning gain in weight has occurred, the health care provider can instruct the patient to seek medical attention from their primary care provider and assist in the communication process in making that appointment, or instruct the patient to present to the emergency department.

3. Monitoring the dietary intake of sodium, the most common amount is 2,000 mg per day; patients may need to be educated on how to read food labels on packaged foods to determine the amount of sodium it contains.
4. Monitoring of daily fluid intake per discharge recommendations; patients may need to be educated on how to measure liquids or how to ration out the liquids throughout the day.
5. Monitoring compliance with the most up to date medication regime; the health care provider may need to instruct the patient to take more or fewer medications, such as Lasix, depending on weight gain, weight parameters, and the primary care provider's recommendation.

Objectives for this project include:

1. Congestive heart failure patients determined to benefit from this program would receive an initial visit from the healthcare provider at least three days prior to discharge and again the day of discharge to further discuss program expectations.
2. Each patient participating in this program would receive a follow up phone conversation from the health care provider within two days of hospital discharge to reiterate discharge instructions regarding congestive heart failure and the self-management required.
3. Each patient participating in this program would weigh daily, using proper weighing techniques, and record these weights for predetermined follow up phone conversations with the health care provider.

4. Each patient participating in this program would record their daily sodium and fluid intake for predetermined follow up phone conversations with the health care provider.
5. Each patient participating in the program would be compliant with medications prescribed by their primary care provider for the management of congestive heart failure and discuss this compliance with the health care provider during a predetermined follow up phone conversation.
6. Each patient participating in the program would be monitored for visits to the primary care provider's office, the emergency department, and hospital admission.

Clinical Question

In patients with congestive heart failure, how does monitoring of self-management interventions compared to no monitoring of self-management interventions affect hospital readmission rates?

Congruence with Organizational Strategic Plan

The hospital chosen for this project, Hedrick Medical Center (permission to use hospital name granted per Medical Director and Chief Nursing Officer), is a critical access hospital which is part of a faith-based not-for-profit health system. The health system is "committed to the highest levels of excellence in providing health care and health-related services in a caring environment," and is based on five core values: teamwork, quality, customer service, learning and innovation, and stewardship (Saint Luke's, n.d.). The mission statement and core values of Hedrick Medical Center focus on working together as a team to provide the patient with the

highest quality of care by using evidence-based interventions. This project is supported by both the core values and mission statement as it is focused on providing close monitoring of self-management interventions in congestive heart failure patients is supported by these as the project requires healthcare providers to work as a team to educate the patient and provide close follow up to monitor the effectiveness of self-management interventions in the outpatient setting. Successful project implementation, as well as both provider and patient engagement, would help to reduce patient mortality, decrease hospital readmission rates, and decrease healthcare costs.

The initiative to reduce hospital readmission rates for all diagnoses is one that can be found in all healthcare systems; increased readmission rates lead to decreased reimbursements and increased healthcare costs. The project site has already formed several committees to prevent and review readmissions. First, the Transition of Care team looks at patient satisfaction scores related to the discharge process. One focus of this group is providing patient education regarding what they have determined to be the top three readmission diagnoses: congestive heart failure, chronic obstructive pulmonary disease, and pneumonia. The team has implemented colored zone cards, which allows the patient to determine what zone (green, yellow or red) the symptoms they are experiencing fall into. Once they have determined what zone they are in, the card instructs them to either do nothing, call their primary care provider, or present to the emergency department. These cards can be tailored to each patient's needs and symptom parameters.

The Readmission Review committee at the project site reviews monthly readmissions, focusing on the diagnosis, disposition, follow up with the primary care provider and any other special instructions the patient was given during their previous hospitalization. One concerning observation made by L. Adkins was that many readmitted patients were not following up with a primary care provider after discharge (personal communication, December 5, 2018). This gap

was found to be related to the following root causes: (a) discharging nurse failing to make the appointment; (b) the patient stating they would make the follow up appointment and then failing to do so; (c) the patient fails to attend their follow up appointment despite it being made prior to discharge; (d) or the patient does not have an established primary care provider at all (L. Adkins, personal communication, December 5, 2018). The team put together a list of the local rural health care clinic providers to assist the patients in getting established with a local primary care provider; preferably one that uses our electronic health record system and can see all aspects of the patient's previous hospitalization.

Both of these organizational committees are very supportive and interested in this project due to its involvement with congestive heart failure patients and its overall goals to reduce patient mortality, reduce readmission rates due to congestive heart failure, and reduce the overall health care costs of congestive heart failure. The number of hospital readmissions is recorded daily and many patients at increased risk for hospital readmission are referred to the hospital's Swing Bed program to prolong the patient's stay in order to focus on education topics and gain strength by working with physical and occupational therapy. The goal of this Swing Bed program is to prepare the patient to go home in hopes of preventing hospital readmission.

Synthesis of Evidence

The literature search strategy was to find randomized control trials, meta-analyses, systematic reviews, and papers published by experts in the topics of congestive heart failure and self-management techniques of the condition. The literature to support this project was found using the EBSCO databases of CINAHAL, Medline, Cochrane Database of Systematic Reviews, and others; and PubMed, the National Institutes of Health and National Library of Medicine. Each database was searched using the following key phrases: "congestive heart failure" which

totaled 6,598 results, “heart failure” which totaled 64,399 results, and “self-management of congestive heart failure” which totaled 7,014 results.

Articles included pertained to congestive heart failure research, the physiology of congestive heart failure and the self-management of congestive heart failure. Articles that did not focus on congestive heart failure or those that added in other comorbidities with the research were excluded from use due to the needed focus on congestive heart failure self-management alone. Articles published in the past five years were selected in order to provide the most up to date research on congestive heart failure and how effective self-management of congestive heart failure is in patients who have been discharged from the hospital after being diagnosed with the condition.

Using the search strategies described above, considerable research was found in the field of congestive heart failure and the self-management techniques to decrease the number of readmissions due to exacerbation of congestive heart failure symptoms. Congestive heart failure is a global pandemic, which continues to rise due to the increase of congestive heart failure risk factors, such as hypertension, smoking, obesity, etc., and the mismanagement of worsening congestive heart failure symptoms (Jones, Roalfe, Adoki, Hobbs, and Taylor, 2018), and despite the advanced medical treatments being offered to these patients, congestive heart failure patients continue to have increased hospitalization and mortality rates (Jonkman et al., 2016).

It was estimated that 5.8 million Americans had congestive heart failure in 2012 and this is predicted to increase to over 8 million by 2030 (Zohrabian, Kapp, and Simoes, 2018). Do, Young, Barnason, and Tran (2015) found that patients with congestive heart failure totaled 6.5 million hospital days in 2010, and between 12 to 15 million primary care provider visits. Due to this increase and the increase in hospitalizations, it is recommended that the health care system

be redesigned as to where evidence-based practice is carried across the health care setting, continuing into the primary care office and community (Driscoll et al., 2016).

Moon, Yim and Jeon (2018) and Do et al. (2015) suggest self-management interventions in congestive heart failure patients to improve the patient's overall knowledge and skills in order to manage their condition in the outpatient setting. Researchers agree that hospital readmissions could be reduced by up to 50% if patients comply with self-management interventions and receive adequate support from health care personal. According to Abbasi, Ghezeleih, and Farahani (2018), Audureau et al., (2018), Haynes and Kim (2017), Herber, Atkins, Stork, and Wilm (2018), Jonkman et al., (2016), and Toukhasti, Driscoll, and Hare (2015), self-management interventions include medication compliance, diet and exercise recommendations, and recognizing worsening of congestive heart failure symptoms and seeking the proper medical treatment when needed.

Theoretical Framework

The framework for this project was guided by the Donabedian model, used for examining health services and evaluating the quality of health care, which focuses on the structural, process and outcome measures of an organization. Structural measures include providing close monitoring of congestive heart failure patients using an efficient process that leads to a high-quality of individualized care. The project took place in the outpatient setting of a hospital where patients follow up with primary care providers. Those involved in the project include: (a) the team leader, who is responsible for seeking out patients, providing follow up phone conversations, and monitoring collected data; (b) the nurses and social workers in the inpatient setting who are responsible for working with the team leader to find patients who would benefit from program participation; (c) hospitalists and cardiologists who implement evidence-based

practice when treating patients with congestive heart failure; and (d) the primary care providers that follow up with patients after hospital discharge and communicate with the team leader regarding patient concerns.

The framework process includes the following: (a) seeking out patients who would benefit from the program during the inpatient stay; (b) following up with the patients after discharge to discuss weights, medications and dietary intake; (c) communicating concerns to the primary care provider; and (d) assisting the patient in determining when to seek medical attention for congestive heart failure symptoms. Outcomes from the project looked at data collected from follow up phone conversations and which was used to determine the effectiveness of the program, where improvements could be made, and changes in practice.

Chapter II: Methodology

Project Design

The effectiveness of self-management interventions in congestive heart failure patients is identified as a quality improvement project. Several research studies have been completed demonstrating a reduction in hospital readmission rates with increased follow up and monitoring of patients diagnosed with congestive heart failure and there is no such program implemented for Hedrick Medical Center, located in Chillicothe, Missouri. When speaking with the Quality Manager of the hospital, patients admitted to the hospital are provided education regarding their condition and how to manage their symptoms at home (A. Snyder, personal communication, January 11, 2019). However, once they are discharged, there is no follow up with the patient other than regular appointments with their primary care provider (A. Snyder, personal communication, January 11, 2019). It is the aim of this project to provide better follow up and

monitoring of these patients and further improve the quality of care provided to patients with congestive heart failure.

Setting

This project took place at Hedrick Family Care (permission to use clinic name granted per Medical Director and Chief Nursing Officer), a rural healthcare clinic located in Chillicothe, Missouri. This clinic employs six physicians and three nurse practitioners, all of which provide care to patients with a diagnosis of congestive heart failure. The team lead worked closely with other providers located in Livingston County, Missouri, and the hospitalist group of Hedrick Medical Center, who provide care to inpatients admitted with the diagnosis of congestive heart failure. Hedrick Family Care also employs a Care Coordinator that follows up with patients after they are discharged from the hospital. However, this position only follows up with patients who have primary care providers employed by Hedrick Family Care and usually does one follow up visit. When discussing the project with several members of the staff, including project team members, they were very supportive of the project and believed it is one that would greatly improve the outcomes of patients who visit this facility for treatment of their congestive heart failure.

Population/Sample

Patients included in this project had to be residents of Livingston County, Missouri, have a primary care provider practicing in Livingston, County Missouri, have a diagnosis of congestive heart failure and reside in their own homes. If a patient was found to meet inclusion criteria, the team lead consulted with the patient prior to discharge, providing education, surveys, and the overall goals of the project. After the consultation was completed, the patient was asked

if they would like to participate in the program. The exclusion criteria included those living outside of the selected area or having a primary care provider that did not practice within the area. Based on the inclusion criteria, the project team anticipated the sample size to be low because of the large amount of information needed to be kept on each patient for an extended period of time. For the purposes of the quality improvement project, the program intended to include ten patients who agreed to participate in the follow up phone conversations. This was a much smaller sample size than those presented in the literature however, those studies were performed in larger areas with larger research groups. By choosing a smaller population size, more individualized care planning can be given to each participant at this time.

Tools/Instruments

The Self-Management Questionnaire (See Appendix A) was provided to the patient during the initial consultation with the team lead prior to hospital discharge. The survey was designed by the doctoral student as a way to determine the participant's overall compliance with self-maintenance interventions. Throughout the literature review, studies provided data related to the compliance of self-management interventions by the patient (Zohrabian, Kapp, and Simoes, 2018). The main interventions included: (a) weighing every day; (b) contacting the PCP with increased fatigue, shortness of breath, lower extremity edema or weight gain; (c) compliance with fluid and intake; and (d) compliance with the medication regimen. These interventions were incorporated into the questionnaire so that compliance could be assessed by the patient.

The Heart Failure Zones flier, provided by Saint Luke's (2018) (See Appendix B), allows participants to evaluate their congestive heart failure symptoms daily and determine their next steps in managing their care. This particular type of education is used by many hospitals, including Hedrick Medical Center, and includes up-to-date and accurate information regarding

worsening signs of congestive heart failure. The Continuation of Care Team of Hedrick Medical Center provides this flier to all patients admitted with congestive heart failure and requires it as part of this discharge education. The Congestive Heart Failure Patient Daily Log (See Appendix C), developed by the doctoral student, was designed for use when providing follow up phone conversations with participants. This log includes a place for the date, the participant's daily weight, oral and sodium intake, and daily medications taken to treat congestive heart failure. The log incorporates the self-management interventions assessed by the Self-Management Questionnaire.

Project Plan

As patient recruitment for the program was initiated by frontline staff on the inpatient unit of Hedrick Medical Center, it is critical that staff members understand the objectives of the program and which patients meet inclusion criteria. In speaking with Jim Skipper, nurse manager for all inpatient units, it was decided that education can easily be presented to staff during shift huddles which are led by the House Supervisor on duty (J. Skipper, personal communication, March 12, 2019). In presenting education to nursing staff during shift huddle, every nurse employed on the inpatient unit can be reached and can assist in the recruitment of congestive heart failure patients for the program. The project was also discussed during the March 2019 House Supervisor monthly meeting and provided staff with an overview of the project plan and objectives. Should the House Supervisor on duty not be able to huddle with staff during their shift, Mr. Skipper would then lead the shift huddle and provide the objectives of the program and education regarding which patients meet inclusion criteria. All staff members were encouraged to contact the team lead or project mentor for any questions or further clarification.

Patients who are admitted to Hedrick Medical Center with a diagnosis of congestive heart failure were identified by the inpatient staff as meeting the criteria for program participation and verbally notify the team lead. The team lead provided the patient with education regarding the program and asked if they would like to participate at the conclusion of the consultation. If the patient agrees, the team lead provided the patient with the Self-Management Questionnaire and the Heart Failure Zone flier. The team lead reviewed the patient's medical record and continued to meet with the patient daily during their inpatient stay, providing education regarding proper weighing techniques, medication uses, dietary recommendations and proper measuring of fluids and sodium, and planning for follow up after discharge. The team lead was responsible for obtaining a working phone number from the patient or family members.

Once discharged, the team lead would continue to follow up with the patient on a daily basis for the first two weeks via phone conversations. These phone conversations would determine if the patient is properly weighing daily, following dietary guidelines, and medication regimes. After the first two weeks, the team lead may determine that less frequent follow up conversations are needed if the patient is compliant with self-interventions more than 90% of the time. If this goal is reached follow up conversations may be scheduled three times a week or biweekly. The team lead may determine that conversations need to happen more frequently should self-intervention compliance fall below 80% and resume daily follow up conversations as needed. Concerns such as increased weight gain were conveyed to the primary care provider from the team lead within 24 hours and the team lead may make follow up visits for the patients to assist in the management of symptoms. Physician visits, emergency department visits and hospital admissions due to congestive heart failure were tracked by the team lead on the participant's follow up conversation log. This data allows the team to identify if the self-

management interventions are benefiting the patient, if closer participant monitoring is needed, or if the participant requires further education.

Measurable outcomes include:

- 80% of patients that meet participation criteria would be identified by staff within the first 24 hours of admission and obtain signed informed consent.
- The team lead would make contact with 80% of program participants within 24 hours of signed consent.
- 80% of program participants would receive personalized education regarding proper weighing techniques, medication uses, dietary recommendations, and planning for follow up for a least two sessions prior to discharge.
- 80% of program participants would receive the Heart Failure Zone education tool for home use.
- The team lead would make contact with 80% of program participants on the day of discharge.
- The team lead would make contact with 80% of program participants every day during the first week of program participation.
- After the first two initial weeks, the team lead would determine if the program participant was able to be contacted less frequently.
- 80% of program participants would weight daily and follow dietary guidelines and medication regimes, which would be documented by the team lead using the Congestive Heart Failure Patient Daily Log.

The team lead for the project was solely responsible for collecting program participant data using the Congestive Heart Failure Patient Daily Log (See Appendix C). Data collected

from these phone conversation logs were entered into the program participant's personal Microsoft Excel workbook and a copy of the log was provided to the project mentor and other team members for review and feedback. Upon entering data, the team lead reviewed previously collected data and determined if any interventions were needed. For example, if the patient had gained four to five pounds in the last three days the team lead recommend the patient make an appointment with their primary care provider and assisted the patient in making said appointment if needed. The team lead reviewed education with the patient to ensure the patient was weighting correctly, being compliant with dietary and fluid guidelines, and taking their congestive heart failure medications correctly. After six months of data collection, readmission rates for patients with congestive heart failure would be reevaluated and have a five percent reduction in the number of readmissions for Hedrick Medical Center. The Self-Management Questionnaire (See Appendix A) was completed by the participant prior to hospital discharge to assess the participant's current level of compliance with self-management interventions for congestive heart failure. During the follow up phone conversations, the Self-Management Questionnaire was to be completed weekly after discharge to monitor the participant's progress with self-management interventions.

The success of this project was contingent upon the reduction of readmission rates by 10% due to congestive heart failure and meeting the goals of the project objectives. With reduced readmission rates, Hedrick Medical Center may develop a clinical staff position to resume the role of team lead and continue the program. The staff member is this position would continue to follow program objectives and the staff member may need to modify program objectives if an increase in congestive heart failure readmission is detected. For example, the staff member may need to provide additional education while the program participants are inpatient or change self-

management interventions as congestive heart failure research continues to develop. Program performance would be reported to the Readmission and Transition of Care committees and Executive Council of Hedrick Medical Center.

The timeline for the methods portion of this program (See Appendix D) was developed over 15 weeks from January 7th, 2019 to April 27th, 2019. During the first week of development, a project mentor was selected and approved to provide guidance for the program. The project mentor is currently the education specialist for Hedrick Medical Center and showed great interest in the program and its potential to grow into a clinical position at the facility. The second week of the project examined other potential members for the project team to provide insight and direction to the program. The clinical care coordinator for Hedrick Family Care was selected and approved to be a team member. The clinical care coordinator follows up with all Hedrick Family Care patients after hospital discharge to ensure the patients were able to maintain their follow up appointment(s) and obtain their discharge medication(s); the clinical care coordinator also reviews newly prescribed medication(s) and medication changes if needed. This program closely resembles the care coordinator position, however, it focuses solely on patients diagnosed with congestive heart failure and provides closer monitoring.

The third week focused on the development of practicum activities which includes: (a) setting inclusion/exclusion criteria for patients diagnosed with congestive heart failure who can be asked to participate in the program; (b) creating educational plans/timelines for program participants; (c) attending monthly Transition of Care Team and Readmission Team meetings to discuss the progress of the project and areas for improvement; and (d) developing surveys/questionnaires that assess program participant knowledge of self-management interventions for congestive heart failure. Providing program education and expectations were

provided to the providers employed by Hedrick Family Care during weeks nine and ten, and facilitation was assisted by the clinical care coordinator. During weeks ten and eleven the IRB application was prepared with the assistance of the project chair, project mentor and team lead, and the application was originally submitted during week twelve.

During the week of April 29th memos were sent to frontline inpatient Hedrick Medical Center staff and Hedrick Family Care providers from the team lead regarding the program implementation date and upcoming in-service dates and program presentations for staff education. The printing of project surveys, questionnaires, and education pamphlets took place during the week of May 6th and were provided to frontline inpatient Hedrick Medical Center staff and Hedrick Family Care providers during the week of May 13th. The tentative week of implementation for the project was May 20, 2019.

Data Analysis

The program participant data collected using the Congestive Heart Failure Patient Daily Log was entered into a Microsoft Excel worksheet and this Excel worksheet included the participant's daily weight (included weight gain/loss), oral intake, sodium intake, and medication compliance. If the patient was admitted to the hospital due to congestive heart failure symptoms, the team lead entered a note into the participant's Excel worksheet documenting the admission date. In addition to hospital admissions, primary care provider visits were also noted by the team lead in the participant's Excel file documenting any changes made to the participant's medication regimen or dietary recommendations. The project mentor and team member(s) were oriented to the locked file cabinet and location of the file cabinet key in order to validate entered data. Data was validated by reviewing the Congestive Heart Failure Patient Daily Log and comparing it to the data entered into the Microsoft Excel workbook for each program participant.

The team lead presented the data collected to the project mentor and team member(s) weekly for review.

The Self-Management Questionnaire is based on a scale of one to five, with one being the participant strongly disagrees with their compliance and five being they strongly agree with their compliance, an increase in the participant's rating indicated increased compliance with self-management interventions. Conversely, a decrease in the participant's rating indicated a decrease in compliance with self-management interventions. The most current Self-Management Questionnaire was compared to previously administered questionnaires to determine whether or not the participant was progressing with the program. Participants that continued to increase their compliance were considered for less frequent follow up phone conversations (e.g. three times per week), whereas participants who had a decrease in their compliance continued to require daily follow up conversations. The data collected from the Self-Management Questionnaire was either interpreted as whether or not the participant had an increase in compliance with self-management interventions when provided close monitoring with daily follow up phone conversations. The team lead presented the data collected to the project mentor and team member(s) weekly for review.

Quantitative data collected included: (a) weight presented as a weekly average and labeled as pounds; (b) oral intake presented as a weekly average, labeled as ounces and be compared to the patients recommended oral intake guideline; and (c) sodium intake presented as a weekly average, labeled as grams and was compared to the patients recommended sodium intake guideline. Quantitative data collected for medication compliance was presented as percentages of "YES" or "NO", where "YES" indicated 100% medication compliance and "NO" indicated less than 100% medication compliance.

Institutional Review Board/Ethical Issues

Due to the monitoring of self-management interventions of congestive heart failure patients being a quality improvement project involving human subjects, informed consent (See Appendix F) signed by the program participant was required by the Bradley University Committee on the Use of Human Subjects in Research (CUHSR, 2019). Personal health information used for program purposes included the patient's name and date of birth, patient's telephone number, questionnaires completed by the patient, and the data collected on the Congestive Heart Failure Patient Daily Log. Those aware of patient participation included the project team, the patient's primary care provider, and the inpatient unit nurse referring the patient to the program. All patient information was stored in a locked file cabinet located in the education office with the file cabinet key kept in the project mentor's private desk. Patients who declined to participate in the program, any and all collected patient information and data were disposed of in a locked confidential bin.

As this project involved the use of human subjects, approval by the Bradley University Committee on Use of Human Subjects in Research (CUHSR) was warranted. Once completed by the doctoral student, the CUHSR application was submitted to the DNP Project Team Chairperson for Bradley University. With approval from the DNP Project Team Chairperson, the CUHSR application was submitted to the Chairperson of the CUHSR committee. Hedrick Medical Center served as the project site and required approval from the Saint Luke's Health System Human Research Protection Program (HRPP) and included the Institutional Review Board as well. The HRPP required a Request for Human Subjects Research Determination form. The site's IRB provided a Reliance Agreement, which was submitted along with the CUHSR application for Bradley University.

Chapter III: Organizational Assessment and Cost Effectiveness Analysis

Organizational Assessment

Hedrick Medical Center had already established committees committed to the reduction of readmission for patients with congestive heart failure and the hospital was ready to accept and implement the project. Anticipated barriers for implementation included: (a) difficulty of frontline staff to identify potential program participants; (b) inability to complete program participant follow up conversations; and (c) concerns for filling the position should Hedrick Medical Center decide to continue the program. The patients who meet 100% of the participation criteria were identified by frontline staff within the first 24 hours of admission and these patients were referred to the team lead. Unforeseen risks included: (a) lack of personalized education; (b) failure of the patient to properly use the Heart Failure Zone education tool; (c) missed contact points with program participants; and (d) missed documentation of recorded data.

Professional collaboration with inpatient unit staff and manager, the director of inpatient care, local primary care providers and local pharmacies was needed to ensure the success of the program. The team lead worked closely with the inpatient unit staff members to ensure the proper recruitment of patients. The clinical care coordinator and team member worked closely with all providers employed by Hedrick Family Care and assisted in providing education and facilitating conversations with said providers when needed.

Cost Factors

Primary costs include printing of questionnaires, which were provided to the participants, and printing of weekly Congestive Heart Failure Patient Daily Logs for each program participant. These were provided by the team lead as there was a low number of participants in the program. As the inpatient unit at Hedrick Medical Center provided Heart Zone fliers to

patients diagnosed with congestive heart failure, the fliers were ready to be provided to patients who wished to participate in the program (J. Skipper, personal communication, 2019). Other costs included the time provided by the team lead and other project members to educate and monitor patients, and the time of those frontline staff who required education and recruited patients for the program. As staff already participated in daily nursing huddles, no additional time was needed to provide education to staff. There was not foreseeable impact of the daily workflow as staff screen potential program participants. The total anticipated cost to create and print the questionnaires, fliers, and logs was one hundred dollars (See Appendix E). Should the project site decide to implement the project indefinitely, the budget would need to include the salary of one employee to carry out the program.

Chapter IV: Results

Analysis of Implementation Process. During the first steps of the implementation process, frontline nursing staff were educated on the program objectives and inclusion and exclusion criteria. These staff members were asked to refer qualifying and agreeable patients to the team lead for further evaluation and education. The unit social worker was also helpful in finding patients for the program. Originally, only patients admitted to the inpatient floor of the project site were to be included in the program, however, due to a low sample size, a modification to the implementation process was submitted requesting to include nursing staff from the project site's cardiology clinic to find qualifying and agreeable participants (See Appendix G). The modifications to reach out to the cardiology clinic in hopes of gaining a larger sample size were approved and implemented. Selected patients were also evaluated by the team lead and contact was made with these patients for further evaluation and education. Due to the difficulty to obtain a larger sample size, a lesson learned would be to include patients of different facility areas

instead of limiting the population size to one specific, as well as small, area. Also, identifying possible needs for modifications early is warranted in order to gain approvals prior to deadlines.

Initially, the team lead would approach the patients about possible participation in the program, however, it was identified that many patients were not aware they had the condition of congestive heart failure listed in their charts. Therefore, the initial approach of these patients had to be changed from asking them about their congestive heart failure to asking them if they had been diagnosed with congestive heart failure. Many patients reported they had been told they had "swelling in their legs", but had never been given the formal diagnosis of congestive heart failure. This finding could be an area of improvement for providers and nursing staff when educating the patient on their condition.

Self-management interventions for patients that agreed to participate did not change. Participants were asked to complete the Self-Management Questionnaire (See Appendix A) during the initial visit with the team lead, and preferably weekly thereafter. However, due to participants not answering follow up phone calls, some were unable to complete the questionnaire weekly.

Analysis of Project Outcome Data. Participants were asked to weigh themselves daily, preferably first thing in the morning while wearing the same type of clothing and after voiding. Four of the five participants were able to correctly complete this task on a daily basis, however, one participant was difficult to reach the majority of the time and refused to weigh herself correctly or daily as she was too tired, busy or stressed (Table 1). Participants were asked to track their oral fluid intake each day and follow fluid restrictions recommended by their primary care provider, if applicable. Only two of the five participants had fluid restrictions and were compliant (Table 1). The remaining participants did not have fluid restrictions but understood

how to properly measure their fluid intake. Measuring salt proved to be difficult for all five participants as they were unsure of how to appropriately read nutrition labels and measure the amount of salt they consumed in their diet (Table 1). One participant also had meals delivered to her from a local senior center and was unsure of the salt content in the meals received. Consuming a low-sodium diet was the response by most of the participants even after providing dietary education and resources for sodium measurement. Lastly, participants were asked to report the medications they were prescribed for congestive heart failure and report their compliance (Table 1). Four of the five participants were compliant with their congestive heart failure medications and one patient was currently not prescribed any medications for their congestive heart failure. These interventions were consistent throughout the implementation process and were asked of all participants.

Table 1.

Average participant weight, oral intake and sodium intake

Participant	Weight (pounds)	Fluid (mL)	Sodium (mg)
Participant 1	163	759	"low-sodium"
Participant 2	205	1373	"low-sodium"
Participant 3	182	822	"low-sodium"
Participant 4	135	1676	"low-sodium"
Participant 5	155	1160	"low-sodium"

Once the patient had agreed to participate in the program, it was suggested that they complete daily phone conversations with the team lead to discuss their daily weights, fluid and salt intake, and medication regimens. Three of the five participants were consistently compliant with daily phone conversations with one of these participants being able to reduce the need for phone conversations to twice per week (Table 2). One participant started the program requesting to only be called twice per week as she felt she was already adequately compliant with her self-

management interventions. One participant requested not to be called daily and was difficult to reach when called.

Table 2.

Number of days in the program, phone conversations attempted and completed

Participant	Program Days	Conversations Attempted	Conversations Completed
Participant 1	50	30	28
Participant 2	59	14	4
Participant 3	46	12	7
Participant 4	30	21	19
Participant 5	20	13	10

The Self-Management Questionnaire was completed when the participants began the program. Overall, patients reported that they felt more comfortable with self-management interventions during their participation in the program, however, one participant was only able to complete the initial questionnaire. Four of the five participants were able to appropriately weigh daily. Three of the five participants were neutral to the questions of calling their provider if they were experiencing increased shortness of breath as this wasn't a symptom they typically experienced and were not requiring oxygen supplementation. Initially, all participants less than agreed that they would contact their provider if they noticed an increase in swelling or weight gain, however, over the course of the program, the majority of the participants agreed that they would contact their provider if these conditions arose. Four of the five participants agreed they limited their fluid intake, however, the remaining participant was able to do so after starting the program and receiving education. All participants agreed or strongly agreed they consumed a low-salt diet and this did not change over the course of the program. One participant was unable to answer the question of medication compliance as they did not take any medication for their

congestive heart failure, however, the remaining four participants agreed or strongly agreed they were compliant with taking their medications for congestive heart failure appropriately.

Missing data consisted of daily phone call follow ups that were not completed due to availability of the participant, if the participant had not weighed that day or they did not record their oral intake from the day before. The initial goal of the program was to document sodium intake in milligrams, however, this was difficult for participants to do even with education and picture references and so "low-sodium" diet was reported by all participants. Other missing data included the Self-Management Questionnaire if the participant was unable to be reached or was unable to provide answers at the time of the phone conversation.

Chapter V: Discussion

Findings. There were no main changes observed in care delivery from frontline staff caring for congestive heart failure patients, however, changes were made as to how the team lead approached patients for program participation and the education needed to accurately weight daily and measure fluid and sodium intake. During participation in the program, no participant presented to the emergency department nor were they admitted to the hospital due to exacerbations of their congestive heart failure symptoms. While one participant was hard to contact and an additional participant was already able to implement self-management interventions at home, the remaining three participants commented on how they felt the program benefited them and were very appreciative of the efforts put forth by the program team.

During implementation, one difficulty was obtaining the proper sample size due to the lack of patients that met inclusion criteria. Another difficulty was contacting participants on a daily basis and having the participant take the time to answer questions and receive education

when needed. The greatest success of this program was being able to assist those that truly needed the additional monitoring of congestive heart failure symptoms and who benefited most from the program. Many of the participants were eager to participate and to also have someone to discuss their accomplishments and concerns with. Another success of the program is the fact that none of the participants were readmitted to the hospital during their participation in the program. There was also success in the development of a team lead-participant relationship as the program continued. Given that many of the participants improved in the awareness of their congestive heart failure symptoms, were able to participate regularly in phone conversations, and did not present to the emergency department or were admitted to the hospital due to exacerbation of congestive heart failure, the program interventions were an overall success.

Limitations. Limitations of this program included the small sample size and short implementation period. Due to these limitations, there was also a lack of data that could be obtained to determine the effectiveness and the sustainability of this program.

If the sample size were to be large enough, sustainability of the program would be more likely. As there is already a Clinical Care Coordinator at Hedrick Family Care, this program could be placed under the responsibility of this staff member in order for the program to continue. A modification to this program would be to include patients that reside outside of Livingston County, Missouri, and to include the patients of Hedrick Family Care in the program.

Further data collection is necessary to determine if monitoring of self-management interventions do help to decrease hospital readmission rates, as well as morbidity and mortality.

Practice Implications. The program can allow nursing to see where they can provide education in regards to self-management interventions to patients during their inpatient stay. Nurses can

provide the Heart Failure Zones flyer (See Appendix B) to patients and discuss how patients can monitor their symptoms of congestive heart failure and when patients need to seek medical attention. Nursing staff can provide inpatients with ways to document their daily weight and intake of fluid and sodium, as well as providing education on their medication regimen as they develop their nurse-patient relationship. Nursing staff providing care to patients with congestive heart failure should have the most current education on congestive heart failure in order to provide accurate services to this patient population.

Future Research. Future research into the area could focus on the use of the interdisciplinary team to provide more advanced education to patients with congestive heart failure regarding their weight, fluid and sodium intake, and medication compliance. There is much room for improvement in regards to education in measuring their sodium intake properly, which would also benefit their overall congestive heart failure symptoms.

Nursing and Health Policy. There are currently no health policy issues in regards to congestive heart failure patients. Opportunities to improve this area would be to recommend patients to programs such as this one or to have certain education requirements for these patients, which can be provided by a trained healthcare professional in the inpatient or outpatient setting. Reimbursements for such a program would be an incentive for entity participation, especially if these programs were shown to reduce hospital readmission rates, mobility, and mortality due to congestive heart failure. Policies can also be established on inpatient units that certain education must be provided to patients with congestive heart failure. For example, the inpatient unit at Hedrick Medical Center recommends providing the Heart Failure Zones flier to inpatients diagnosed with congestive heart failure, however, this is not required nor documented anywhere

in the patient's electronic medical record. It is also not documented if the patient received education regarding congestive heart failure and how receptive the patient was to the education.

Chapter VI: Concussion

The impact that congestive heart failure can have on a patient's life is substantial and requires close monitoring and patient participation (Iyngkaran, Toukhsati, Harris, Connors, Kangaharan, Ilton et al., 2016; Jonkman et al., 2016). Patients are expected to adhere to complicated medication regimes, lifestyle modifications such as dietary and fluid restrictions, and monitoring for signs and symptoms of congestive heart failure exacerbations. The implementation of this program can be life changing for those patients who struggle with self-managing their congestive heart failure symptoms. Not only can patient outcomes be improved but also, the overall cost of congestive heart failure can be reduced by providing patients with close monitoring and extensive education on how to manage their symptoms, as well as intervening before their symptoms require emergency medical evaluation and possible hospital admission.

The program truly speaks to DNP Essential VI: Inter-Professional Collaboration for Improving Patient and Population Health as it looks at team-based care for the safety and wellbeing of all patients and requires the team lead to use effective communication and collaborative skill to lead the inter-professional team. DNP Essential V: Health Care Policy for Advocacy in Health Care supports this program as it strives to identify where improvements can be made in the congestive heart failure population as it looks through current policies and delivery systems, and is in correlation with DNP Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice as the team lead creates a unique approach to the complex issue of patients self-managing their congestive heart failure symptoms.

The dissemination plan for this program included its presentation to the project sites Readmission Review team, Continuation of Care team, Regional Nursing Practice Council and the IRB of Saint Luke's Hospital, as well as an oral presentation to the DNP committee at Bradley University.

The goal to develop, implement and carry out a program that would benefit such an immense population was achieved. Communication and leadership skills were improved, as well as a better understanding of the overall process of the time and effort placed into areas of quality improvement. Lastly, professional relationships were developed with the program participants, as well as the project team members.

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Appendix A

Self-Management Questionnaire

Self-Management Questionnaire	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I weight myself every day.	1	2	3	4	5
If my shortness of breath increases, I contact my PCP.	1	2	3	4	5
If my feet/legs become more swollen than usual, I contact my PCP.	1	2	3	4	5
If I gain 4-5 pounds in one week, I contact my PCP.	1	2	3	4	5
I limit the amount of fluids I drink.	1	2	3	4	5
If I experience increased fatigue, I contact my PCP.	1	2	3	4	5
I eat a low salt diet.	1	2	3	4	5
I take my medications as prescribed.	1	2	3	4	5

Appendix B

Heart Failure Zones

HEART FAILURE ZONES

Which zone are you in today?

EVERY DAY

- Weigh yourself in the morning before breakfast. Write it down and compare it to yesterday's weight or your dry weight. Dry weight is:
  - Your weight when you are not retaining extra fluid
  - Your weight the first day home from the hospital
- Take medicine as prescribed.
- Check for swelling in feet, ankles, legs, and stomach.
- Eat low-salt food and limit sodium intake to 2,000 mg per day. Read sodium content on labels and avoid using a salt shaker to flavor food.
- Balance activity with periods of rest.

If you have been recently hospitalized it is important to keep your one-week visit with the doctor or clinic after being dismissed, even if you are feeling well.

Saint Luke's HEALTH SYSTEM

Green Zone All Clear: Your goal

Your symptoms are absent or mild and you have:

- No new or worsening:
  - Shortness of breath or fatigue
  - Swelling of feet, ankles, legs, or stomach
  - Chest pain
- Stable weight (no weight gain of more than two pounds in one day or five pounds in one week).

Yellow Zone Caution: Warning

Call your heart failure doctor or nurse if you:

- Gain two pounds in one day or five pounds or more in one week
- Lose more than four pounds from your dry weight
- Have new or worsening:
  - Shortness of breath with activities or when lying down
  - Swelling of feet, ankles, legs, or stomach
  - Fatigue
  - Dizziness
  - Feelings of unease or that something is not right

Red Zone Danger: Emergency – You need immediate attention

Call 911 or go to the emergency room if you:

- Have severe shortness of breath while sitting still
- Have new or worsening chest pain
- Feel confused or cannot think clearly

2014-1200

Appendix C

Congestive Heart Failure Patient Daily Log

Week: ___	**Date**	**Patient Weight**	**Oral Intake**	**Sodium Intake**	**Daily Medications**
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					
Saturday					

Patient Weight: the patient should weigh first thing in the morning, after voiding and removing clothing; the patient should also use the same scale for weighing

Oral Intake: total oral intake will be recorded from the previous day and be documented in ounces

Sodium Intake: total sodium intake will be recorded from the previous day and be documented in grams

Daily Medications: using the patient's discharge medication list, the daily medications (including dose and frequency) will be listed and recorded as taken for the previous day

Appendix D

Timeline

January 7th, 2019 to July 10th, 2019

Week of January 7th: selection and approval of project mentor

Week of January 14th: selection of potential members for the project team

Week of January 21st: development of practicum activities

Week of March 18th: program presentation to HMC leaders for nursing education

Week of March 11th: preparation of IRB application

Week of March 25th: the application was be submitted during week twelve

Week of April 14th: preparation and submission of the site IRB application

Week of April 29th: memos to frontline inpatient Hedrick Medical Center staff and Hedrick Family Care providers regarding implementation date and upcoming in-services and program presentations

Week of May 6th: preparation of modified IRB application printing of project surveys and questionnaire

Week of May 13th: program education and expectations provided to frontline inpatient Hedrick Medical Center staff and Hedrick Family Care providers

Week of July 10th: submission of modified IRB application

Appendix E

Proposed Budget

Questionnaires/fliers	$50
Daily logs	$50
Total Cost:	**$100**

INFORMED CONSENT FOR EXEMPT STUDIES WITH MINIMUM RISK

Self-Management Interventions for Congestive Heart Failure Patients

You are invited to participate in a quality improvement program. The purpose of this program is to reduce patient mortality, decreased hospital readmission rates, and decreased healthcare costs by educating and reinforcing the self-management of congestive heart failure in the community. This study consists of individualized education for you prior to hospital discharge, answering questions on a survey and close follow up including daily monitoring of weight, oral intake, sodium intake, and medication compliance. Your participation in this study may vary depending on the self-management of your congestive heart failure symptoms. The records of this program will be kept private. In any sort of report we make public we will not include any information that will make it possible to identify you. Data collected will be kept confidential and will only be accessed by program team members. Taking part in this study is voluntary. You may choose not to take part or may leave the study at any time. You may also skip specific survey questions.

Compensation: You will not be compensated for your participation in this program.

Questions about this study may be directed to the investigative group in charge of this program: Jordan Fries, BSN at jfries@mail.bradley.edu and Sarah Silvest Guerrero, DNP at ssilvestguerrero@fsmail.bradley.edu. If you have general questions about being a research participant, you may contact the Committee on the Use of Human Subjects office at (309) 677-3877.

You are voluntarily making a decision to participate in this study. Your submission of participation means that you have read and understand the information presented and have decided to participate. Your participation also means that all of your questions have been answered to your satisfaction. If you think of any additional questions, you should contact the researcher(s).

Appendix G

Modified Timeline

August 5th, 2019 to September 3rd, 2019

Week of August 5th: discussed program with nurses of Hedrick Medical Center's Cardiology Clinic

Week of August 23rd: Submitted modifications of IRB application to include patients from the Cardiology Clinic of Hedrick Medical Center

Week of September 3rd: conduct potential participant interviews with cardiology clinic patients

Appendix H

SWOT Analysis

Strengths	Weaknesses
- Interests and support of managers - The large population that would benefit	- Lack of compliance by patients - Failure to reach patient after discharge - Effectively communicating needs and concerns
Opportunities	**Threats**
- Increase number of program participating - Reducing hospital readmissions - Reducing patient mortality	- Inability to contact and monitor patient - Insufficient time and funds for the project - Lack of data to validate program need