Promotion of Heart Failure Self-Care in the Outpatient Setting

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Promotion of Heart Failure Self-Care in the Outpatient Setting

By

Meredith C. Lubas

DNP Scholarly Project Committee

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Submitted in partial fulfilment of the requirements for the degree of

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Graduate Department

APPROVAL FOR SUCCESSFUL DEFENSE

Meredith C. Lubas has successfully defended and made the required modifications to the text of the DNP Final Scholarly Project for the Doctor of Nursing Practice during this Fall, 2021

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Date

Dr. Moira Kendra
Date

Dr. Mahesh Bikkina
Date
Dedication

This work is lovingly dedicated to the friends & family who have accompanied me on this adventure.

To my better half and the love of my life, Kevin: your unwavering support and selfless encouragement during this journey has made this paper possible. Thank you for being the Johnny to my Moira and thank you for calmly answering every 2 AM cardiology question as I wrote this paper. My gratitude to you is endless.

To my sister and best friend, Emily: thank you for your infinite motivation throughout this doctoral journey. The invaluable gifts of wisdom and perspective you have provided during the course of this degree has made this possible. (Beep, beep!)

To my parents, Ed and Donna: thank you for always patiently supporting my seemingly endless academic and professional pursuits (also, for allowing me to turn your dining room into a personal library and serving as an ‘audience’ for every presentation over the past two decades). This has been a long process and it would have never been possible without your patience and inspiration.

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Abstract

Medical management of chronic heart failure consists of a closely managed medication regimen, cardiovascular testing, interventions, and lifestyle modification, including self-care practices. While medication management, testing, and interventions have concrete guidelines, heart failure self-care education lacks solid guidelines and thus is often poorly defined and variable in practice. Outpatient heart failure treatment typically focuses on medication management more than self-care practices. This project addresses the current lack of heart failure self-care education in the outpatient setting.

For this project, a total of seven patients with heart failure with a reduced ejection fraction received a patient survey in order to assess baseline self-care understanding and to identify education needs. A cardiology nurse practitioner provided a brief heart failure self-care patient education session and conducted telephone follow up 10-14 days after the session to assess efficacy of the initiative. Six of the seven participants completed the telephone follow up.

Analysis of the patient survey revealed wide variability on heart failure self-care practice and understanding. However, 100% of the participants who completed the telephone follow up demonstrated sustained improvement in heart failure self-care knowledge. Notably, 100% of the participants noted they would be interested in additional in-office patient education sessions.

The Promotion of Heart Failure Self-Care in the Outpatient Setting project identifies the need for additional research on the topic of heart failure self-care practices in the outpatient setting and future study on the effects on patient outcomes such as patient satisfaction and hospital admissions.

Keywords: heart failure, HFrEF, self-care, outpatient, office, cardiology, nursing, nurse practitioner
Background

This doctoral-level quality improvement project was initially developed in the fall of 2020 and was assigned the working title of “Promotion of Heart Failure Self-Care in the Outpatient Setting” which has been shortened to better reflect the aim of the project as a quality improvement project. The following sections describe the terms used in this project, a description of the project, and stated goals and objectives.

Definition of Terms

Common terms employed throughout the initiative include:

- **Heart Failure (HF):** When the heart is not able to pump blood as effectively as it should, which may lead to inadequate blood flow and oxygen flow to other organs (American Heart Association, 2017).

- **Left Ventricle:** The heart’s main pumping chamber which pumps oxygen-rich blood into the body’s main artery (the aorta) to be delivered to the rest of the body (Mankad, 2021).

- **Left Ventricular Ejection Fraction (LVEF):** A measurement of how well the heart’s left ventricle is pumping. LVEF is measured as a percentage of blood pumped out of the left ventricle with each heartbeat and is most commonly measured using an echocardiogram. A normal ejection fraction is approximated at 55-75% (Mankad, 2021; Zipes et al., 2019, p. 403).

- **Echocardiogram:** An ultrasound of the heart that is used to visualize the heart, valves, and how blood is pumping through the heart (Mankad, 2021).

- **Heart Failure with Preserved Ejection Fraction (HFpEF):** The walls of the heart muscle are too stiff to relax properly so not enough blood can get into the heart, resulting
in less blood going out to the rest of the body. Ejection fraction is within a normal range. HFrEF is often referred to as “systolic heart failure” (Zipes et al., 2019, p. 403-405).

- **Heart Failure with Reduced Ejection Fraction (HFrEF):** The heart is weak and the heart muscle is stretched so the heart cannot pump normally. Ejection fraction for HFrEF typically measures < 40%. However, in previous heart failure self-care projects and articles, HFrEF is often operationalized as LVEF < 45%, so for the purposes of this project LVEF < 45% is considered HFrEF, congruent with the literature review conducted. HFrEF is often referred to as “systolic heart failure” (Zipes et al., 2019, p. 403-405).

- **Heart Failure with Midrange Ejection Fraction (HFmrEF):** HFmrEF is a relatively new classification of heart failure where the left ventricular ejection fraction is approximately is 40-49% (Zipes et al., 2019, p. 403-405). Although it is growing, literature and data on HFmrEF is limited. Thus, for the purposes of this project LVEF < 45% is considered HFrEF (defining LVEF < 45% as the cutoff for HFrEF classification is congruent with previous literature on the topic of heart failure self-care initiatives; Andronic et al., 2016).

- **Self-Care:** Actions taken to improve/promote one’s health (Craven & Hirnle, 2009, p. 23; Pender et al., 2015, p. 235).

- **Inpatient Healthcare Setting:** Healthcare provided while admitted to a facility (usually a hospital; Craven & Hirnle, 2009, p. 5).

- **Outpatient Healthcare Setting:** Healthcare provided without being admitted to a facility. This includes healthcare provided during medical office visits (Craven & Hirnle, 2009, p. 5).
**Description of the Project**

The Promotion of Heart Failure Self-Care in the Outpatient Setting initiative aims to evaluate the efficacy of a brief education initiative for patients with chronic heart failure with a reduced ejection fraction in the outpatient setting. Participants were recruited from a large cardiology practice in northern New Jersey; participant characteristics include those with HFrEF (LVEF < 45%) who had prearranged routine follow up appointments in the outpatient cardiology office. The initiative was operationalized as follows: At the completion of the office visit, the project was discussed with the client and participation was optional. Clients who agreed to participate in the initiative received a six-question survey to examine any knowledge deficits regarding heart failure self-care practices (see Appendix A). Knowledge deficits were identified by question(s) answered incorrectly on the patient survey. Based on the needs identified from the survey, the nurse practitioner provided a focused (10-15 minute) education session using standardized patient education curricula and materials. During this dialogue, the nurse practitioner individualized the education materials to the patient’s unique circumstances. The questions on the patient survey were arranged intentionally to be in a descending priority order and each patient received education on only one topic per education session.

Education materials were developed on five topics, each topic corresponding with question(s) on the patient survey (questions #5 and #6 corresponded to the same education topic). Heart failure self-care topics addressed include (a) General Information, (b) Exacerbation, (c) Daily Weight, (d) Diet, and (e) Health Promotion. The patient education materials were developed by the nurse practitioner and one general heart failure self-care document was used after obtaining permission from the American Heart Association (AHA; see Appendix I). Additionally, supplemental documents from the Preventive Cardiovascular Nurses Association (PCNA) were
included; these documents are open-access and authorized for patient education use. The original materials were intentionally designed with larger font sizes and high contrast colors on thick paper in order to accommodate potential mild sensory deficits. Original documents were branded with the medical group’s logo (after verbal authorization to use the logo was obtained), and all documents were professionally printed and placed in folders. (See Appendices B, C, D, E, F, G for patient education materials.) The nurse practitioner reviewed the printed educational materials during the in-office education session and the materials were provided to the patient in a folder for safekeeping and reference; contact information for the nurse practitioner and cardiology office were included in the patient education folders. The nurse practitioner tailored the heart failure self-care information to the patient’s individual needs and unique circumstances during the education session. Approximately 10-14 days after the education session, the nurse practitioner contacted the participants via telephone to follow up and assess efficacy of the education session. The follow up assessment was conducted to assess efficacy of the patient education session. This was achieved by repeating the question from the patient survey on the topic which the participant received education.

Initially, heart failure education sessions were arranged during the patients regularly scheduled office visits. The project stakeholders, Meredith Lubas and Dr. Mahesh Bikkina, opted to initially implement this project on limited weekdays and in the future expand to include a greater number of nursing educators, which would allow the initiative to be offered daily.

**Purpose of the Project**

The Promotion of Heart Failure Self-Care in the Outpatient Setting initiative is a quality improvement project with the goal of improving heart failure self-care practices among patients with chronic heart failure. While developing the initiative, the needs of the community and
patient population were considered and the problem of insufficient heart failure self-care education was identified. Currently, for patients with HFrEF in northern New Jersey, self-care education programs are largely focused on the inpatient setting and this initiative fills the existing gap of the lack of self-care education for patients with heart failure with a reduced ejection fraction in the outpatient setting. The implementation of this heart failure self-care quality improvement initiative provides standardized heart failure self-care education to qualifying patients and individualizes the relevant information to the patient’s unique circumstances during a one-on-one education session with a cardiology nurse practitioner.

**Goals and Objectives**

The goal of improving heart failure self-care practices among patients with chronic heart failure in the cardiology office was addressed through a quality improvement project titled “The Promotion of Heart Failure Self-Care in the Outpatient Setting”.

**Project Objectives** include

- survey baseline understanding of key heart failure self-care topics,
- assess demographic data and evaluate trends/associations,
- increase patient knowledge and understanding of heart failure self-care concepts via standardized education sessions,
- provide patients with individualized, practical information regarding how to incorporate heart failure self-care techniques,
- sustain improved heart failure self-care understanding and utilization as identified via follow up telephone call.
Significance of the Project

A comprehensive literature review was performed. The review identified that the most relevant research was conducted with subjects in the inpatient setting or immediate post-acute hospitalization setting (such as during or immediately after hospital discharge) and most patients included were diagnosed with heart failure with reduced ejection fraction (typically LVEF < 45%). This underscored the need for a quality improvement initiative to evaluate the efficacy of an individualized self-care education session for patients with heart failure in the outpatient setting. Congruent with available literature, this project recruited participants with measured LVEF < 45%.

Review of Literature

The literature review was conducted using the Seton Hall University Library system and Google Scholar searches. Databases explored include CINAHL, PubMed, Science Direct, and OVID. Both qualitative and quantitative research was included in the review and publication dates were set from the year 2000 to 2021. Search terms used included “heart failure”, “self-care”, “patient education”, “outpatient”, “nurs*”, “nurse practitioner”, “HFrEF”, “HFpEF”, “self-care behaviors”.

A comprehensive literature review was conducted and identified the following themes: patients with heart failure often employ suboptimal self-care practices, heart failure self-care interventions in inpatient and outpatient settings have been proven to have beneficial impacts on self-care practice understanding and utilization, nursing professionals (registered nurses and nurse practitioners) are uniquely positioned to provide effective heart failure self-care patient education, and standardized education that is individualized to the patient is an effective approach to patient education.
This quality improvement project has the potential to decrease hospital readmissions, which is a goal of all healthcare organizations as HF-related hospital readmissions present a considerable financial burden. One in four heart failure patients will be readmitted within 30 days of hospital discharge, half will be readmitted within six months (Khan et al., 2021). Since the Centers for Medicare and Medicaid (CMS) introduced financial penalties for hospital readmissions in 2010, there is a considerable incentive for health care systems to promote heart failure self-care in an attempt to mitigate readmissions (Khan et al, 2021). Khan et al. (2021) identified that 30-day readmissions for heart failure are closely linked to acute care during the initial hospital encounter whereas 90-day readmissions are more closely related to “ambulatory management and care coordination”. Thus, this initiative has the potential to mitigate heart failure-related readmissions and result in significant cost-savings for health care facilities and the larger healthcare environment in the United States.

Literature from the United States and abroad demonstrates that most patient with heart failure have suboptimal heart failure self-care practices and require heart failure self-care education support.

Asadi et al. (2019) found that among subjects in Iran, most patients with heart failure are classified in the moderate self-care category. Koirala et al. (2020) identifies that overall self-care was classified as poor among heart failure patients in Nepal.

Riegel et al. (2007) sampled 29 patients living with chronic heart failure in the United States and upon evaluation of participant’s heart failure self-care scores, identified that 10 were assigned “poor” self-care scores, 16 were assigned “good” self-care scores, and three were assigned “expert” self-care scores. The authors found that self-care scores were positively associated with level of expertise (with the exception of self-care confidence which was highest
in patients in the “good” self-care expertise category, not the “expert” category). Riegel et al. (2007) identified only three participants who were classified as “expert” in heart failure self-care.

Literature demonstrates that interventions to promote self-care behaviors among patients with heart failure are beneficial for patient’s health status in inpatient and outpatient settings. Literature demonstrates a balance between interventions conducted among patients in an inpatient setting and an outpatient setting, however many studies of patients in an outpatient setting were recruited while inpatient or immediately after hospital discharge.

Riegel and Carlson (2002) studied patients in an outpatient setting and found that barriers to heart failure self-care can be classified into two categories: (a) symptom burden and (b) misconceptions/lack of knowledge regarding how to perform self-care. The primary motivating factor for performing self-care was staying out of the hospital. Common challenges encountered include: physical limitations, coping with the treatment regimen, lack of knowledge, negative emotions, other health issues, and personal struggles.

Britz and Dunn (2010) found that female participants enjoyed a higher self-care score than the male participants, older patients were associated with higher self-care confidence, patients with higher general health scores also had higher self-care confidence scores, and that significant associations exist between heart failure patients’ perceived health and their self-care confidence. This study highlights the importance for every healthcare encounter to serve as an opportunity to enhance patient’s heart failure self-care knowledge and individualize care plans in order to optimize quality of life.

Róin et al. (2019) evaluated whether self-care and heart failure knowledge persist nine months after hospital discharge, after subjects participated in an outpatient program in the Faroe Islands. The post-discharge outpatient program consisted of standardized multidisciplinary heart
failure patient education, which was presented to participants during follow-up visits to the outpatient clinic. The education program emphasized self-care topics such as medication management, symptom self-monitoring, diet, and exercise. Rōin et al. identified an overall improvement in self-care scores from the patient’s baseline to the three- and nine-month intervals; the authors also identified a sustained increase in heart failure knowledge scores. Rōin et al.’s study demonstrates that disease-specific patient education interventions in outpatient settings can effectively sustain improvements in self-care and heart failure knowledge (2019).

Strömberg et al. (2003) assigned patients to follow up at a nurse-led heart failure clinic (intervention) or usual care (control) in order to evaluate the effect of follow-up at a nurse-led heart failure clinic on the outcomes of mortality, morbidity, and self-care behavior for patients hospitalized with heart failure 12 months after hospital discharge in Sweden. The nurse-led clinic allowed specially-trained registered nurses to make protocol-led medication changes and provide heart failure and social support education to patients and their families. The authors identified that the intervention group was associated with significantly higher self-care scores. The intervention group was also associated with fewer admissions/fewer hospital days during the first three months and fewer events (death or hospital admission) at the 12-month interval.

Interventions focused on patient education led by nursing professionals were proven to be associated with an improvement in heart failure self-care knowledge, maintenance, management, and confidence. Awoke et al. (2019) utilized telephone follow up to evaluate long-term efficacy of the education sessions.

Blue et al. (2001) utilized specialist nurses to provide individualized education, home visits, and telephone-follow up. Blue et al.’s intervention group was associated with a significant reduction in hospital readmission as compared with the control group. The authors considered
regular contact with nurses and home visits to be a valuable contribution to reducing hospital readmissions.

David et al. (2018) evaluated the content of hospital discharge information for patients with heart failure authored by nurse practitioners and physicians. David et al. (2018) identified that nurse practitioners are more likely to concrete recommendations and emphasize symptom identification as compared with physicians (MDs).

Bryant and Himawan’s (2019) study utilized a nurse practitioner-led heart failure self-care program employed the use of the Heart Failure: Self-Care to Success (HF S2S) Toolkit to promote patient use of self-care practices. Although Bryant and Himawan’s (2019) study was limited by poor retention, the findings demonstrate a significant decrease in heart failure admissions after the HF S2S intervention and increase in self-care scores.

Lowery et al. (2012) utilized nurse practitioners who received additional regular heart failure training to provide care to the intervention group (as compared with the control group which received usual care). The intervention group was associated with fewer hospital admissions, hospital bed days and lower mortality sustained at the one and two-year intervals.

Grady et al. (2014) demonstrated a secondary analysis of data from the Heart Failure Adherence and Retention Trial (HART) to assess the impact of self-management interventions on health-related quality of life (HRQOL). The intervention group received 18 two-hour group counseling/coaching sessions over one year in addition to usual care whereas the control group received “an enhanced education” experience consisting of receiving education materials via mail and follow up telephone calls. The authors found that both groups experienced increased quality of life scores; there was no significant change by treatment arm subgroups. The lack of
significant change between the two groups suggests that less-resource intensive interventions may lead to similar benefits as more-resource consuming interventions in clinical settings.

Dalfo-Pibernat et al. (2019) evaluated the degree of knowledge of primary care nurses on the principles of self-management of heart failure and associated variables using the Nurses’ Knowledge of Heart Failure Education Principles Questionnaire (NKHFEP). Dalfo-Pibernat et al. (2019) evaluated a group of registered nurses (RNs) in Barcelona, studying their knowledge of five themes related to heart failure self-care: diet, liquids, weight, medication, and exercise. The authors found that only 36 (16.7%) RN NKHFE scores reflect an “adequate” knowledge level. The study identified that RNs holding PhDs and those who have received specific training in heart failure are more likely to have adequate knowledge of heart failure self-management.

Lowery et al. (2012) conducted a prospective quasi-experimental study to evaluate admission and mortality outcomes among 969 patients with chronic heart failure being treated at primary and tertiary Veterans Affairs facilities. The intervention group received care from nurse practitioners who received additional regular heart failure training. The control group experienced usual care. The usual care control group was associated with a significant increase in all-cause admissions and bed days; mortality in the usual care group was higher at one- and two-year intervals. The intervention group was found to have a greater number of outpatient clinic visits for heart failure at one- and two-year intervals.

Lycholip et al. (2018) found that the addition of telemedicine did not lead to any advantage for self-care management for patients with heart failure.

A noteworthy trend present in literature is that nearly all available studies evaluated patients with chronic heart failure with reduced ejection fraction (HFrEF), many citing LVEF < 45% in their inclusion criteria. The review of current literature demonstrates that a need exists
for additional study of cost-effective methods of providing patient education on the topic of heart failure self-care in the outpatient setting.

**Project Methodology**

The Promotion of Heart Failure Self-Care in the Outpatient Setting initiative is a quality improvement project. The initiative gathered and analyzed demographic information as well as patient survey and follow-up data, all of which was analyzed for relevant trends.

A quality improvement initiative was implemented using a convenience sample of patient with HFrEF in an outpatient cardiology office with a primary outcome of identifying heart failure education deficits and improving heart failure self-care understanding. This initiative was conducted from Fall 2020 to March 2021. The original intention was to conclude the initiative after one month (May 2021), however due to positive reception from patients and limited participants, the program was extended into early July 2021. A total of seven patients with heart failure with a reduced ejection fraction were included in this initiative and received a patient survey which assessed baseline self-care understanding and identified education needs. Six of the seven participants completed the telephone follow up interview. A cardiology nurse practitioner provided a brief heart failure self-care patient education session and conducted telephone follow up 10-14 days after the session to assess efficacy of the initiative.

**Theoretical Framework**

The theoretical framework guiding the project is Dorothea E. Orem’s Self-Care Deficit Theory of Nursing. Orem’s theory is a general theory of nursing which encompasses three theories: the theory of nursing systems, the theory of self-care deficit, and the theory of self-care (Alligood & Tomey, 2010, p. 273). The Self-Care Deficit Theory of Nursing postulates that humans in need of care (patients) are best able to recover when they are able to increase/control
their ability to care for themselves (Alligood & Tomey, 2010, p. 273). Thus, when a self-care deficit exists, such as an acute or chronic illness, nursing professionals are optimally positioned to teach and promote self-care practices to patients in order to maximize self-care understanding and utilization (Alligood & Tomey, 2010, p. 273; Tabloski, 2009, p. 61).

The Promotion of Heart Failure Self-Care in the Outpatient Setting initiative is congruent with Orem’s Self-Care Deficit Theory of Nursing. The project identifies specific self-care knowledge gaps among patients with chronic HFrEF, such as misunderstanding of diagnosis, inability to identify exacerbation, diet and daily weight noncompliance, and nonadherence to health promotion principles. This initiative utilizes a nursing professional (nurse practitioner) to promote heart failure self-care practices, congruent with Orem’s Theory which encourages nursing staff to collaborate with the patient in order to promote health and wellness (Alligood & Tomey, 2010, p. 273; Tabloski, 2009, p. 61).

The goal of the initiative is for patients to assert more control over their self-care practices, which is congruent with Dorothea Orem’s theory. When the nurse practitioner provides heart failure self-care education, she is collaborating with the patient to individualize the information so the patient is empowered to employ the knowledge gained. Thus, after the education sessions, patients are equipped with the knowledge to carry out self-care practices, empowered to become active participants in their treatment regimen, and are able to verbalize when they should contact their cardiology office. This leads to an increased healthcare quality of life, improved compliance with medications and adjunctive therapies, and enhanced sense of control over their disease process.
Risk Analysis

Strengths

The cardiology practice serving as a setting for the intervention is a large, diverse group offering interventional and noninterventional cardiovascular services throughout several locations across northern New Jersey. The main cardiology suite in Bergen County, New Jersey served as the setting for this intervention. Strengths of the project include the setting, patient population, reputation, and affiliations. The large patient volume and diverse geographic and socioeconomic backgrounds provided an ideal population for the intervention.

Additional strengths include the implementation of an evidence-based quality improvement project focused on patients with heart failure and include comprehensive patient education documents on the topics of disease understanding, exacerbation, daily weight, diet, and health promotion. These topics are congruent with intentional and impactful patient self-care activities as recommended in current cardiovascular and heart failure management guidelines (Zipes et al., 2019, p. 494-496). The American College of Cardiology/American Heart Association Guidelines for Treatment of Patients with Prior or Current Symptoms of Chronic HFrEF notes that “patients with heart failure should receive specific education to facilitate heart failure self-care”; this is a class I level of evidence B recommendation in the 2017 ACC/AHA/HFSA update to the 2013 guidelines (Yancy et al., 2017). Self-care and self-management for patients with heart failure is a cornerstone of non-pharmacologic management in the 2021 update to the 2017 guidelines (Maddox et al., 2021).

The cardiology practice enjoys a positive reputation in the surrounding community and is well-regarded at several academic and university medical centers in the northern New Jersey/New York metropolitan areas. The affiliated medical centers support continuing
education and promote quality improvement initiatives related to heart failure. All affiliated medical centers track heart failure quality measures and support interventions to promote self-care and thereby, prevent hospital readmissions (i.e., CMS 30-day readmission heart failure) and promote patient satisfaction.

**Weaknesses**

Several realities had been considered and classified as weaknesses for this project. Weaknesses include varying patient appointment times, scheduling limitations, hospital electronic medical records, and varying staff members. Patient’s office visit appointment durations vary widely by healthcare provider: some providers double-book fifteen-minute appointments whereas other providers book only one or two patients per hour. Widely varying office visit times can lead to challenges in ensuring there is sufficient time for the intervention’s education and comprehensive discussion.

The nurse practitioner’s full-time professional commitments are also a weakness, as they limit the amount of time that is able to be dedicated exclusively to patient education sessions. The affiliated hospitals utilize different electronic medical records, which is a weakness as it can complicate medical records review. The patient education materials were discussed verbally and written information was provided to patients, however weaknesses include the inability to provide information to patients who speak a language other than English and/or have cognitive impairments.

Additional weaknesses include a low number of patients enrolled in this quality improvement project, the printed education material exists in English only and is not offered in additional languages, and the setting is only one cardiology office. Future recommendations include increasing the number of patients enrolled in this quality improvement project, creating
patient education material in additional languages in order to educate a broader number of patients, and extending this initiative to all cardiology offices in the region and then across the nation and the globe.

**Opportunities**

External opportunities for the project include quality metric improvements, advertising opportunities, and reputation benefits. By improving heart failure self-care practices and education, there is a potential to improve hospital readmission rates which would have significant financial and quality benefits for the health care systems. Urbich et al. (2020) found that annual total medical costs for heart failure care were estimated at $24,383 per patient and total heart failure costs (direct and indirect) totaled $43.6 billion in the US in 2020 (p. 1220, 1227). Thus, any efforts to promote heart failure self-care and potentially avoid hospitalization may have a profound impact on the finances of local healthcare systems as well as the national healthcare costs.

Quality measures collected for the cardiology practice have the potential to be positively influenced by this initiative, which would further improve the practice’s reputation within the affiliated hospitals. Improvements in heart failure quality measures can improve the practice’s reputation within the affiliated hospitals and the local healthcare community. Patient satisfaction scores may also improve with this initiative, which would then improve the group’s reputation among our patients; word of mouth and positive social media reviews may enhance the cardiology practice’s reputation in the community. Successful reception of the project can provide valuable advertising opportunities to highlight the practice’s focus on individualized patient care, which is aligned with the practice’s current initiative to increase its social media and internet presence.
Threats

The primary threats to this project were associated with the COVID-19 pandemic. Uncertainties related to appointments being canceled and/or transitioned to a telemedicine format threatened the ability to successfully implement the initiative. The availability of medical support (i.e., transportation and cardiac rehabilitation services) were limited due to closures which influenced many patients’ ability to carry out self-care practices. Similarly, at times, family/healthcare/social support was limited due to caregiver schedule limitations and quarantine/isolation guidelines secondary to the pandemic. Other threats included variability in patient demographics, including literacy levels, social support, socioeconomic status, etc.

Additional threats include continued increasing healthcare costs if heart failure self-care practices (exacerbation identification, health promotion, diet/daily weight compliance) are not addressed through a self-care education initiative.

Implementation Plan

Initially, the problem of self-care knowledge deficits among patients with heart failure in the office setting was identified by the nurse practitioner. Through conversation with colleagues in the cardiology office and the director of the Doctor of Nursing Practice program at a local university, it was decided that this problem was worth further exploration through a quality improvement initiative. After conversation, stakeholders such as the practice administrator, cardiologists, nurse practitioners, nurses, and medical assistants agreed with the importance of this initiative and provided ongoing support throughout the project. Resources were obtained through literature searches and educational materials were finalized and printed prior to implementation. The patient education materials (see Appendices) were intentionally designed and developed to provide comprehensive and accurate heart failure self-care information which
can be accessed, comprehended, and referenced by the patient population. The initiative was developed over several months from summer 2020 through summer 2021 with the following implementation timeline beginning in May 2021 and ending in July 2021 after seven patients were enrolled.

1. Identify Qualifying Patients
   A. The nurse practitioner reviewed office appointment schedule approximately one week in advance to identify patients (using standard criteria) who qualify for inclusion.
      i. **Inclusion criteria** was defined as
         a. Established patient with an existing appointment
         b. English-speaking
         c. Preexisting diagnosis of HFrEF (LVEF < 45%)
      ii. **Exclusion criteria** was defined as
         a. Cognitive impairment
         b. New patient appointment
         c. LVEF ≥ 45%
   B. Demographic information was obtained from chart review.

2. Distribute Patient Survey
   A. At the conclusion of the appointment, the nurse practitioner distributed the patient survey to identify heart failure self-care education needs.

3. Patient Education
   A. The nurse practitioner provided a focused, individualized 10–15-minute education session on a heart failure self-care topic identified on the patient survey.
Supplemental education materials and adjunctive documents were used during the education session and provided to the patient.

i. i.e., if a patient indicates that they do not check daily weights on the patient survey… individualized education regarding daily weights will be provided and a collaborative plan to incorporate daily weights into heart failure self-care plan was be discussed.

4. Follow Up

A. Ten to fourteen days after the in-office education session, the nurse practitioner called the patient (via telephone) to evaluate if they have made any changes since the session and identify any barriers to positive change.

B. The nurse practitioner repeated the relevant question from the patient survey again in order to evaluate efficacy of the intervention.

C. In order to evaluate overall reception of the initiative, the nurse practitioner asked if the patient would like more in-office patient education sessions offered in the future (possibly on other topics).

Throughout the development of this initiative, refinements were made to optimize the project and incorporate it into the office’s workflow. All considerations were discussed with the researcher, preceptor (who is an interventional cardiologist and serves the President of the medical group), practice administrator, and office staff members.

Initially, the education sessions were to be delivered by several trained staff members (nurse practitioners and registered nurses), however due to staffing concerns, it was decided that the project would begin with only one nurse practitioner delivering the education sessions.
Instead of implementing this project every day the office is open, the decision was made to limit the initiative to Mondays and then expand to additional days after assessing the data from the initial implementation period. When barriers to implementing the project on Mondays came about (i.e., the office was closed), the project was implemented on the nearest Thursday. The original intention was to conclude the initiative after one month (May 2021), however due to positive reception from patients and limited participants, the program was extended into early July 2021. Initially, the telephone follow-up was to take place one month after the in-office education session. However, this was shortened to 10-14 days in order to address any patient needs/concerns in a timely fashion.

**Budget**

The most significant expense associated with the Promotion of Heart Failure Self-Care in the Outpatient Setting initiative is the cost of the nurse practitioner’s time. For budgeting purposes, the assumption was made that each participant education encounter totaled 30 minutes (five minutes to discuss the initiative with the potential participant, 10 minutes to complete and review the patient survey, and a 15-minute education session). The initial budget estimated an average of five participants per Monday and a total of four Mondays during the month of May 2021 when the office is open (the fifth Monday is a holiday). Assuming each follow-up telephone call takes 15 minutes, the total time (education encounter and follow up phone call) equals 45 minutes of nurse practitioner time per participant. Five participants per Monday over 4 weeks totals 20 participants during the month of May 2021. 45 minutes per encounter x 20 participants = 900 minutes (or 15 hours) of nurse practitioner time. At an approximate rate of $60/hour, nurse practitioner time totals a monthly expense of $900.
It is worth noting that for this initiative, the nurse practitioner’s time is voluntary so actual cost is $0. In the future, this budget item must be reconsidered to include a greater number of educators at different pay rates and expanded participant volumes.

The cost of education materials must also be considered. While the materials were primarily developed by the nurse practitioner and/or sourced at no cost, the cost of having the PDF documents professionally printed was $280. The nurse practitioner received several quotations for the printing job required for this project and selected the printing vendor offering the most appropriate services at the most reasonable cost.

Basic office supplies were needed to carry out this project, including pens and clipboards for participants to complete the surveys, folders to provide the education material in, and an accordion paper organizer to store the education materials. These costs were estimated at $50 and actually cost $50.

In order to promote marketing for the cardiology group and provide contact information for the researcher, additional business cards were ordered to be placed in the folders with patient education materials; the total cost for the business cards was $50.

The patient education sessions and follow-up telephone calls occur while the office is open and operating, so indirect costs related to office operations (heating/cooling, electricity, use of telephone and EMR, etc.) were unchanged by implementation of this initiative. The budget, as outlined in Table 1, is classified as a “special purpose budget” as it is an activity which is not part of the organization’s annual operating budget; rather, the initiative and its budget exists in response to a need/opportunity (Jones et al., 2019, p. 210).
Table 1

Promotion of Heart Failure Self-Care in the Outpatient Setting

<table>
<thead>
<tr>
<th>Resource</th>
<th>Estimated Cost *</th>
<th>Actual Cost *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse Practitioner</td>
<td>$900</td>
<td>$0</td>
</tr>
<tr>
<td>NP pay rate $60 per hour x 15 hours = $900</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Print Services:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient Education Materials</td>
<td>$300</td>
<td>$280</td>
</tr>
<tr>
<td>Office Supplies:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pens, Folders, Clipboard, Patient Education Document Organizer</td>
<td>$50</td>
<td>$50</td>
</tr>
<tr>
<td>Marketing:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>150 business cards</td>
<td>$50</td>
<td>$50</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$1,300</strong></td>
<td><strong>$380</strong></td>
</tr>
</tbody>
</table>

* Monthly calculations

Marketing Plan

The Promotion of Heart Failure Self-Care in the Outpatient Setting initiative offers the new service of providing patient education sessions on the topic of heart failure self-care practices. This service is provided during a preexisting routine cardiology office visit and is
followed up with a telephone call to assess efficacy of the intervention. This project is aligned with the medical group’s organizational goal’s which focuses on providing each patient with a thorough, compassionate, and personalized healthcare experience. All patients who met the defined inclusion criteria were identified prior to their appointment and asked at their visit if they would like to participate in this free-of-charge service.

Chism recounts Landrum’s “Four Ps” marketing strategy, which refers to product, price, place, and promotion (2016, p. 367). For this initiative, product is the education session, price is free, place is the medical group’s cardiology office in Bergen County, NJ, and promotion includes word of mouth promotion, social medial posts, and distribution of branded materials. Since the initiative applies to a specific group of patients, word of mouth promotion from staff members (i.e., reception and nursing staff) is important. To encourage word of mouth promotion, the nurse practitioner thoroughly described the initiative to staff members and provided frequent updates on the initiative’s progress. The printed patient education materials include branding from the medical group and the business cards were included to promote the nurse practitioner’s work and the medical group’s involvement and support in the Promotion of Heart Failure Self-Care in the Outpatient Setting initiative. While most documents in the patient education materials were developed by the nurse practitioner and include the medical group’s branding, some documents in the printed patient education include professional organization branding (i.e., PCNA) as the documents are open-access and available for patient education use; one document includes the American Heart Association logo (copyright permission was obtained from the AHA for use in this project with the medical group’s name). Once the data was gathered and analyzed, the nurse practitioner pursued publication in local healthcare publications and academic journals.
Healthcare in northern New Jersey is a competitive environment and competition in cardiology is especially fierce due to the saturation of practices and providers in the northern New Jersey/New York metropolitan area. Many cardiology practices tout holistic, comprehensive patient care and working in collaboration with primary care and specialties (including complementary and alternative medicine) in order to attract and retain patients and ensure high levels of patient satisfaction. Individualized patient education initiatives, such as the Promotion of Heart Failure Self-Care in the Outpatient Setting project, provide healthcare benefits to patients while also promoting patient satisfaction and affording opportunities to recruit new clients and enhance the practice’s reputation. The Promotion of Heart Failure Self-Care in the Outpatient Setting initiative is a feasible and viable opportunity to address the needs of the community and practice’s patient population.

As the initiative is cost-effective and requires relatively little maintenance and staff time, the project can be sustained indefinitely. In the future, the initiative can be expanded to include registered nurses as educators and then the project can not only be sustained but can also expand to include a greater number of patients/office settings and even grow to cover topics beyond heart failure (such as hypertension, coronary artery disease, etc.).

**Evaluation Plan**

Participant’s baseline heart failure self-care practices were identified using a six-question patient survey; this survey identified each patient’s individual heart failure self-care education needs. Based on the patient survey results, each participant received specific education on a relevant topic. Outcomes of the initiative were evaluated based on follow-up telephone calls 10-14 days after the intervention, when the applicable patient survey question was presented to the participant again to assess if they have sustained understanding of the topic. The information
was organized and tallied to identify which topic(s) are self-care knowledge gaps, to evaluate the efficacy of the intervention, and to determine if participants would be interested in expanded in-office patient education offerings. The information gathered was tallied weekly to assess trends as the project progressed. The data was analyzed and compared with the pre-defined outcomes in order to evaluate efficacy of the initiative.

**Project Outcomes**

A total of seven patients participated in the project; six of the seven patients completed the telephone follow up for an 86% completion rate. Analysis of the demographic information revealed that five participants were male while two were female. The age range for participants ranged from 52-87 years, with an average age of 64.7 years. Participant’s ejection fraction ranged from 20% to 40-45%, with an average LVEF of 32%.

All six of the participants (100%) who completed the telephone follow up answered the pre-test question correctly, demonstrating an increase in heart failure self-care knowledge sustained at the 10-to-14-day interval. Additionally, all six participants (100%) indicated that they would be interested in additional in-office patient education sessions in the future, possibly on other relevant cardiology topics.

The questions were arranged intentionally to be in a descending priority order and each patient received education on only one topic per education session, as shown in Table 2. Three patients received education on topic 1: General Information; one patient received education on topic 2: Exacerbation; three patients received education on topic 3: Daily Weight; zero patients received education on topic 4: Diet; zero patients received education on topic 5/6: Health Promotion, as demonstrated in Table 3.
### Table 2

**Topic and Question/Answer Choices**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1: General Information</td>
<td><strong>A diagnosis of heart failure means</strong></td>
</tr>
<tr>
<td></td>
<td>a. The force of the blood against the arteries is too high</td>
</tr>
<tr>
<td></td>
<td>b. The heart is not pumping blood effectively</td>
</tr>
<tr>
<td></td>
<td>c. There are too many fats in the bloodstream</td>
</tr>
<tr>
<td></td>
<td>d. The heart rhythm is irregular</td>
</tr>
<tr>
<td>#2: Exacerbation</td>
<td><strong>I should call my cardiologist’s office if (select all that apply)</strong></td>
</tr>
<tr>
<td></td>
<td>a. I feel more short of breath than usual</td>
</tr>
<tr>
<td></td>
<td>b. My legs are more swollen than usual</td>
</tr>
<tr>
<td></td>
<td>c. I gain more than 3 pounds in one day or 5 pounds in one week</td>
</tr>
<tr>
<td>#3: Daily Weight</td>
<td><strong>I check my weight every day</strong></td>
</tr>
<tr>
<td></td>
<td>a. Yes</td>
</tr>
<tr>
<td></td>
<td>b. No</td>
</tr>
<tr>
<td></td>
<td><strong>If yes… at what time of day?</strong></td>
</tr>
<tr>
<td></td>
<td>i. _____ AM / PM</td>
</tr>
<tr>
<td></td>
<td>ii. The time varies</td>
</tr>
<tr>
<td>#4: Diet</td>
<td><strong>When I am ordering at a restaurant, I ask about how much sodium is in the food</strong></td>
</tr>
<tr>
<td></td>
<td>a. Never</td>
</tr>
<tr>
<td></td>
<td>b. Sometimes</td>
</tr>
<tr>
<td></td>
<td>c. Most of the time</td>
</tr>
<tr>
<td></td>
<td>d. Always</td>
</tr>
<tr>
<td>#5: Health Promotion</td>
<td><strong>I see my primary care provider at least once every year (annual wellness visit)</strong></td>
</tr>
<tr>
<td></td>
<td>a. Yes</td>
</tr>
<tr>
<td></td>
<td>b. No</td>
</tr>
<tr>
<td>#6: Health Promotion</td>
<td><strong>I get the influenza vaccine (flu shot) every year</strong></td>
</tr>
<tr>
<td></td>
<td>a. Yes</td>
</tr>
<tr>
<td></td>
<td>b. No</td>
</tr>
</tbody>
</table>
Table 3

*Number of Participants per Topic*

<table>
<thead>
<tr>
<th>Topic</th>
<th>Number of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1: General Information</td>
<td>3</td>
</tr>
<tr>
<td>#2: Exacerbation</td>
<td>1</td>
</tr>
<tr>
<td>#3: Daily Weight</td>
<td>3</td>
</tr>
<tr>
<td>#4: Diet</td>
<td>0</td>
</tr>
<tr>
<td>#5/6: Health Promotion</td>
<td>0</td>
</tr>
</tbody>
</table>

Analysis of survey responses reveals that 57% of participants answered question 1 (a diagnosis of heart failure means...) correctly, demonstrating variable understanding of heart failure general information; see Table 4 for detail regarding responses. 86% of participants answered question 2 correctly (select all that apply: I should call my cardiologist’s office if...); see Table 5. Question 3 assesses if patients check their weight daily; the survey demonstrates that 0% of participants check their weight every day; thus, no participants answered the second part of the question which assessed the time of day in which they check their weight (see Table 6). 14% of participants answered question 4 correctly, revealing that patients are largely not asking about how much sodium is in food when ordering at a restaurant (see Table 7). 100% of participants answered question 5 correctly, demonstrating they have a primary care provider who they actively follow up with (see Table 8). 71% of participants answered question 6 correctly, which assesses health promotion by asking if the patient received the influenza vaccine annually (see Table 9). The wide variability of patient responses assessing heart failure self-care knowledge at baseline are demonstrated in Table 10.
Table 4

Question 1: General Information - Participant Baseline Responses

<table>
<thead>
<tr>
<th>Participant</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response</td>
<td>B</td>
<td>(unsure)</td>
<td>B</td>
<td>C</td>
<td>B</td>
<td>B</td>
<td>D</td>
</tr>
</tbody>
</table>

_Key: Correct Response is B_

Table 5

Question 2: Exacerbation - Participant Baseline Responses

<table>
<thead>
<tr>
<th>Participant</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
</table>

_Key: Correct Response is A, B, C_

Table 6

Question 3: Daily Weight - Participant Baseline Responses

<table>
<thead>
<tr>
<th>Participant</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
</tr>
</tbody>
</table>

_Key: Correct Response is A_

Table 7

Question 4: Diet - Participant Baseline Responses

<table>
<thead>
<tr>
<th>Participant</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response</td>
<td>(n/a)</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>B</td>
<td>D</td>
<td>A</td>
</tr>
</tbody>
</table>

_Key: Correct Response is D_
Table 8

Question 5: Health Promotion - Participant Baseline Responses

<table>
<thead>
<tr>
<th>Participant</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
</tbody>
</table>

Key: Correct Response is A

Table 9

Question 6: Health Promotion - Participant Baseline Responses

<table>
<thead>
<tr>
<th>Participant</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response</td>
<td>A</td>
<td>B</td>
<td>A</td>
<td>B</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
</tbody>
</table>

Key: Correct Response is A

Table 10

Participant Responses at Baseline Tally (Percentage)

<table>
<thead>
<tr>
<th>Question</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>3a</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exacerbation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily Weight I</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily Weight II</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Promotion I</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Promotion II</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correct</td>
<td>57%</td>
<td>86%</td>
<td>0%</td>
<td>14%</td>
<td>100%</td>
<td>71%</td>
<td></td>
</tr>
<tr>
<td>Incorrect</td>
<td>43%</td>
<td>14%</td>
<td>100%</td>
<td>86%</td>
<td>0%</td>
<td>29%</td>
<td></td>
</tr>
</tbody>
</table>

Ten to fourteen days after each education session, the nurse practitioner placed telephone calls to the participant to assess follow up. Six of the seven patients completed the telephone follow up, giving the initiative an 86% completion rate. One patient was lost to follow up. Six of six participants (100%) answered the pre-test question correctly during the follow up, demonstrating the increase in heart failure self-care is sustained at the 10–14-day interval. Six of six participants (100%) indicated that they were interested in additional in-office patient
education sessions on other relevant cardiovascular topics (i.e., hypertension, dyslipidemia, coronary artery disease). Refer to Table 11 for a synthesis of follow up responses.

Table 11

*Participant Follow Up Responses*

<table>
<thead>
<tr>
<th>Participant</th>
<th>Follow Up Response to Relevant Question</th>
<th>Would patient like more in-office patient education sessions on relevant health topics?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(No Response)</td>
<td>(No Response)</td>
</tr>
<tr>
<td>2</td>
<td>Correct</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>Correct</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>Correct</td>
<td>Yes</td>
</tr>
<tr>
<td>5</td>
<td>Correct</td>
<td>Yes</td>
</tr>
<tr>
<td>6</td>
<td>Correct</td>
<td>Yes</td>
</tr>
<tr>
<td>7</td>
<td>Correct</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Summary**

A review of current literature underscores the clinical benefit for heart failure self-care education sessions for patients with chronic heart failure with reduced ejection fraction. Literature demonstrates that current interventions are largely focused in the inpatient or immediate post-acute care hospitalization setting; however, heart failure self-care promotion activities in the outpatient setting have been positively associated with patient’s self-care knowledge and utilization.

Current practice in the outpatient setting focuses on medication management and adjunctive therapies (such as cardiac rehab). The lack of clinical focus on heart failure self-care patient education in the outpatient office setting led to the development of an initiative focusing
on understanding baseline heart failure self-care knowledge and assess the efficacy of individualized self-care education sessions in the outpatient setting.

A survey of heart failure self-care baseline knowledge demonstrated that wide variability exists on the topics of heart failure general knowledge, exacerbation, diet, and health promotion. Other topics had striking baseline findings; compliance to daily weights was dismal (0% of participants reported checking their weight daily) and health promotion was overwhelmingly positive as every participant (100%) reported following up routinely with their primary care provider.

After a nurse practitioner led information session on a heart failure self-care topic identified as an education need was provided, post-intervention data was obtained 10-14 days later via telephone follow up. This follow up data demonstrated that the intervention was successful as 100% of participants responded correctly to the question they previously answered incorrectly. Notably, 100% of participants indicated that they would be interested in receiving more patient education sessions in the office setting. Overall, this project highlights that it is feasible to implement an impactful heart failure self-care education initiative in the office setting.

**Conclusion**

The Promotion of Heart Failure Self-Care in the Outpatient Setting initiative is a quality improvement project which achieved its aim of improving heart failure self-care practices among patients with chronic heart failure with reduced ejection fraction. The initiative was performed in partial fulfillment of the requirements for doctoral degree completion.

Results from this project demonstrate that heart failure self-care knowledge in the outpatient setting is often suboptimal, congruent with available literature. This initiative also revealed that opportunities exist to promote heart failure self-care understanding and utilization.
Through heart failure self-care education sessions offered in the outpatient cardiology setting, this project demonstrated a considerable increase in patient understanding and utilization of heart failure self-care practices.

This project echoes findings from existing literature, which notes that heart failure self-care education can increase improve complementary health practices for patients with heart failure (such as daily weight checks, health promotion activities, dietary adherence, etc.). However, this project focused on patients with HFrEF in the outpatient setting, whereas the majority of literature evaluated patients with HFrEF in the inpatient or immediate outpatient (post-hospital discharge) setting. The Promotion of Heart Failure Self-Care in the Outpatient Setting initiative was positively received by participants who also indicated that they would like for the initiative to be expanded to include other relevant healthcare topics. This finding is revealing and highlights the important opportunity for additional research with provide in-office patient education on other healthcare topics.

Increased utilization of heart failure self-care patient education sessions in the outpatient setting has the potential to increase recognition of heart failure exacerbation and increase patient’s confidence and ability to manage their condition (i.e., through diet and health promotion) and thus, improve patient outcomes. Improved patient outcomes may correspond with decreased hospitalizations and/or shorter hospital stays and thus decreased healthcare costs.

Limitations of this project include the small number of participants. The number of qualifying participants was likely influenced by the COVID-19 pandemic which restricted patients’ ability to be evaluated in the office due to decreased number of onsite office visits per day, limited transportation options, and reluctance of patients to seek in-person medical care during the pandemic.
The data gathered from this initiative strongly supports further research on the topic of patient education in the outpatient clinical setting and highlights the opportunity to promote heart failure self-care understanding and utilization in the office setting.

**Sustainability**

Sustainability of the Promotion of Heart Failure Self-Care in the Outpatient Setting project must be considered. The project was coordinated and education sessions were conducted by one cardiology nurse practitioner. However, future considerations to ensure sustainability include expanding the initiative to include additional educators (registered nurses and nurse practitioners). This expansion may be achieved through a “train the trainer” approach. Once additional trainers are available, the project can expand to include other topics in the cardiology office setting (such as hypertension, dyslipidemia, coronary artery disease). This expansion was endorsed by 100% of respondents during the project’s follow up telephone calls. An expansion of the project may also include offering education sessions and materials in other languages.

Once a sufficient number of staff members are trained to conduct education sessions, the project can be sustained indefinitely into the future as it is cost-effective while affording the medical group the opportunity for increased patient satisfaction and improved patient outcomes.

**Recommendations**

The Promotion of Heart Failure Self-Care in the Outpatient Setting project was thoughtfully designed to be a limited-scope quality improvement project. The initiative was planned to gather quantitative information on the topic of heart failure self-care practices in the outpatient setting and the effect of an in-office patient education session.

The initiative strongly supports the benefit of an in-office patient education session and encourages the need for additional study on the topic of heart failure self-care education sessions.
The information gathered from this project supports further evaluation and additional study on the topic, possibly through studies with a larger sample size and/or studies with a longer duration. It is also worth considering evaluating patient outcomes and trending hospitalization rates in future studies.

In response to the markedly positive reception from participants during the follow up telephone calls, when 100% of respondents reported they would be interested in additional in-office patient education sessions, further evaluation of patient experience through a qualitative evaluation may also be considered. Although future study would certainly lend useful information on the topic, this The Promotion of Heart Failure Self-Care in the Outpatient Setting project adds valuable information to existing research on the topic of heart failure self-care and the impact of education sessions in the outpatient setting.
HEART FAILURE SELF-CARE

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Appendix A

Patient Survey

Promotion of Heart Failure Self Care Survey

1. A diagnosis of heart failure means
   a. The force of the blood against the arteries is too high
   b. The heart is not pumping blood effectively
   c. There are too many fats in the bloodstream
   d. The heart rhythm is irregular

2. I should call my cardiologist’s office if (select all that apply)
   a. I feel more short of breath than usual
   b. My legs are more swollen than usual
   c. I gain more than 3 pounds in one day or 5 pounds in one week

3. I check my weight every day
   a. Yes
   b. No

   If yes... at what time of day?
   i. _____ AM / PM
   ii. The time varies

4. When I am ordering at a restaurant, I ask about how much sodium is in the food
   a. Never
   b. Sometimes
   c. Most of the time
   d. Always

5. I see my primary care provider at least once every year (annual wellness visit)
   a. Yes
   b. No

6. I get the influenza vaccine (flu shot) every year
   a. Yes
   b. No
Appendix B

Topic 1: General Information Education Materials

HEART FAILURE: GENERAL INFORMATION

Heart failure is a medical condition that occurs when the heart is not able to pump blood as well as it should. When the heart isn’t able to pump blood properly, this leads to inadequate blood and oxygen flow to other organs. The term “heart failure” can be misleading, it does NOT mean that the heart has stopped working.

The most common symptoms of heart failure include shortness of breath, fatigue, and leg swelling. Sometimes heart failure is only noticeable with physical activity.

There are two types of heart failure. The two types are based on if the heart’s “ejection fraction” is reduced or preserved. (Ejection fraction measures how well the heart’s left ventricle is pumping and it is most commonly measured using an echocardiogram.)

- In heart failure with reduced ejection fraction (HFrEF), the heart is weak and the heart muscle is stretched so the heart cannot pump normally. This is the more common type of heart failure.
- In heart failure with preserved ejection fraction (HfPEF), the walls of the heart are too stiff to relax properly so not enough blood can get into the heart, resulting in less blood going out to the rest of the body.

Heart failure occurs as a result of a disease or condition that causes damage to the heart, such as high blood pressure, coronary artery disease, cardiomyopathy, or valve disease. Heart failure can progressively get worse, but treatment of these conditions can prevent or slow the development of heart failure.
Enjoying Life While Managing Heart Failure: Understanding the Diagnosis

The work of the heart is to pump blood to all the parts of the body. “Heart failure” means that the heart is not pumping well enough to get oxygen – carrying blood to all of the body’s organs. The word failure means that your heart is failing to do its pumping job well. Even though this problem is called heart “failure,” it does not mean your heart is about to stop working. By working closely with your nurses and doctors, together you can help manage your heart failure.

Why does heart failure happen?

The two most common causes of heart failure are:

- Blockage in a heart artery leading to heart attack and/or damaged heart muscle. Many factors increase the risk for these blockages, like smoking, high cholesterol levels, high blood pressure, diabetes, age, and family history.
- Having high blood pressure for a long time, which overworks the heart muscle and makes it stiff.

Some other causes of heart failure:

- Some infections
- Some cancer treatments
- Many years of drinking too much alcohol
- Valves in your heart that do not open and close correctly (valve problems can be present at birth, or may develop over time)
- Pregnancy (rare)
- Problems in the heart’s electrical system — making the heart beat too fast or too slow — can sometimes cause heart failure.

What are signs that I might need a change in my heart failure treatment?

There are 2 groups of symptoms that can happen when you have heart failure. The first column of symptoms are those from fluid buildup, the second is from your body not getting the oxygen it needs. Your nurse or doctor will talk to you about when to call them if any of these things happen to you, or if the symptoms you may have get worse.

<table>
<thead>
<tr>
<th>Symptoms caused by fluid build up</th>
<th>Symptoms caused by the body not getting as much oxygen-rich blood as it needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shortness of breath or waking up in the middle of the night with trouble catching your breath</td>
<td>Heart beating fast even when you are not doing anything</td>
</tr>
<tr>
<td>Swollen ankles, legs, or belly</td>
<td>Dizziness</td>
</tr>
<tr>
<td>Coughing or wheezing</td>
<td>Feeling tired or fatigued, lack of energy</td>
</tr>
<tr>
<td>Increase in weight</td>
<td>Poor appetite or upset stomach</td>
</tr>
</tbody>
</table>

https://pcna.net/clinical-resources/patient-handouts/
What Is Heart Failure?

What can I do to help my nurses and doctors manage my heart failure?
The most important thing you can do is to let your nurses and doctors know if you have new symptoms or if your symptoms get worse. These symptoms won’t get better by themselves. If you let your nurses and doctors know when there is a change in your weight, your swelling, or how you feel, then they can adjust your treatment. This will help you feel better and may keep you from having to go to the hospital!

Other important things to do to manage your heart failure and to feel better:

- Take your medications every day as prescribed.
- Eat a low salt, heart healthy diet.
- Get regular daily exercise.
- Quit smoking. Don’t use tobacco of any kind.
- Avoid alcohol.
- Weigh yourself every day.
- Keep a daily record of your weight and symptoms.
- Manage your stress.

Remember, call your nurse or doctor if you have:

- Breathing trouble, such as:
  - More shortness of breath or shortness of breath when you aren’t doing anything
  - Waking up in the middle of the night with trouble catching your breath
  - Needing more pillows when sleeping or needing to sit up to breathe at night
  - Coughing or wheezing (noisy breathing)
- Swelling
  - Swollen ankles or legs
  - Swelling in your belly (you cannot button your pants or your belt is too tight)
- No appetite or upset stomach
- Dizziness or feeling lightheaded when you first sit up or stand up
- More tiredness, sleepiness, or mental confusion
- Heart beating fast even when you are not doing anything

Call 911 if you have:

- Severe pain in your chest
- Severe difficulty breathing
- Sudden confusion or dizziness
- Severe weakness or difficulty speaking
- Very fast heart rate or fainting

https://pcna.net/clinical-resources/patient-handouts/
Appendix C

Topic 2: Exacerbation Education Materials

HEART FAILURE: EXACERBATION

There are things that can worsen heart failure (either temporarily or permanently), including not taking your medications as prescribed, a poor diet with high sodium/salt intake, or non-cardiac illnesses (such as the flu or COPD).

Call your cardiologist’s office if you develop any of the following symptoms:
- New or worsened shortness of breath
- A weight gain of 2-3 pounds in one day OR five pounds in one week
- New or worsened cough
- An increase in leg/ankle swelling
- If you have to use more pillows to “prop” yourself up to sleep or if you have to sleep in a chair to feel comfortable

Call 911 and seek emergency medical attention if you experience:
- Severe chest pain/discomfort
- Severe shortness of breath
- Fainting/passing out
- Coughing up frothy/bloody material
Heart Failure: What you need to know

Staying Healthy with Heart Failure

Even though you have heart failure, you can have a comfortable and active life at home by managing your symptoms each day. A few simple changes can help you stay healthy and help keep you out of the hospital. It is very important to follow the directions your nurse or doctor may have given you on how to stay healthy at home.

What Do I Do Now?

Call 911 if you have:
- Chest pain
- Severe dizziness
- Shortness of breath

Call your nurse or doctor if you:
- Gain 2 to 3 pounds within 24 hours or 5 pounds in a week
- Have more trouble sleeping and cannot lie flat
- Notice increased swelling in your legs, feet, or ankles

Call your nurse or doctor if your symptoms get worse:
- More shortness of breath when you are active
- Pain or swelling in your belly
- Trouble sleeping
- Dry, hacking cough

Make sure you:
- Keep a record of your daily weight
- Take all your medicines as directed
- Eat a low-sodium diet
- Ask your doctor or nurse any questions you have about your health
- Stay active and enjoy your life
- Go to all your follow-up appointments.
  Your next appointment is ________________
  with ________________.

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Appendix D

*Topic 3: Daily Weight Education Materials*

**HEART FAILURE: SELF CARE - DAILY WEIGHT**

People with heart failure may notice that they experience *weight fluctuations/weight gain*. Weight gain may occur in patients with heart failure due to *fluid retention*. This happens when the heart is not able to “keep up” with the blood supply so fluid backs up and collects in tissues in the body. This is why it is helpful to *check your weight EVERY day* to trend if you are retaining fluid due to heart failure.

**Procedure: Daily Weight**

1. Weigh yourself every morning, using the same scale, wearing the same amount of clothing.
2. Weigh yourself first thing in the morning, after you’ve gone to the bathroom.
3. Write down your weight every day.

*** Call your cardiologist’s office if you experience a *weight gain of 2-3 pounds in one day* 

OR *five pounds in one week*. Sudden weight gain is a sign that you may be retaining more fluid than you should be.
Weigh yourself every day in the morning after using the bathroom but before breakfast. Write your weight below.

Call your cardiologist if you gain more than 2 pounds in one day or 5 pounds in one week.

MONTH: ________________________________

<table>
<thead>
<tr>
<th>Day</th>
<th>Weight</th>
<th>Comments</th>
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<td>31</td>
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</table>
Appendix E

Topic 4: Diet Education Materials

HEART FAILURE:
SELF CARE- DIET

Low Sodium Diet
Patients with heart failure should maintain a low salt/sodium diet, even patients with no symptoms should adhere to a low sodium diet. This will stop water from building up in your body.

Minimizing the amount of salt in your diet can help you feel better by improving symptoms of heart failure (such as swelling and shortness of breath).

Typically, a heart-healthy diet has a maximum of 1,500 - 2,000 mg (1.5 - 2 grams) of sodium per day.

As a guide...
¼ teaspoon of table salt = 500 mg sodium
½ teaspoon of table salt = 1000 mg (1 gram) sodium
1 teaspoon of table salt = 2000 mg (2 grams) sodium

At Home
☐ STOP adding salt to food.
☐ Remove the salt-shaker from the table.
☐ Check with your cardiologist before using a salt substitute!
☐ Avoid packaged foods (canned/frozen) which can be high in salt.
☐ Use fresh herbs and spices to season food instead of adding salt.

Dining Out
☐ Ask the server about how the food is prepared (ask about which meals can be prepared without salt).
☐ Select an entrée that is grilled, baked, or broiled.
☐ Avoid olives, pickles, croutons, bacon, cheese, and mayonnaise.
☐ Avoid foods prepared with gravy, soy sauce, MSG (monosodium glutamate), or foods that are cured or smoked since they can contain a lot of salt.
☐ Do not use the salt shaker on the table.
Enjoying Life While Managing Heart Failure: The Sodium in Your Food

Most Americans eat too much sodium (salt), which can increase your blood pressure. Too much sodium in your food can also make you retain (hold) extra fluid when you have heart failure. This makes your heart work harder. Fluid buildup can result in (1) fluid in your lungs which causes trouble breathing and (2) swelling (edema) especially in your legs.

It is a good habit not to add salt to your food when cooking or at the table, but the salt shaker only adds a small part of the sodium we eat. Most sodium comes from packaged, processed, store-bought and restaurant foods.

Every patient’s condition is a little different. Talk to your nurse or doctor about any special instructions for you. There is no one standard sodium limit for all patients with heart failure.

An example of how to manage your sodium limit: Your nurses and doctors tell you to eat less than 2500mg of sodium in a day. One way to do this is to plan your meals so that you eat 700mg of sodium or less each meal. This allows you 400mg throughout the day for low sodium snacks such as fruits, raw vegetables, low sodium cereals, unsalted nuts and unsalted pretzels.

Almost half (44%) of the sodium we eat comes from the very common foods on this list. You might not think about food like bread having a lot of salt. But when you eat a few servings a day, it adds up. There are many low sodium choices in these food groups. Learning to read food labels is really important. Eating a lot of fresh fruits and vegetables and foods you make yourself will help keep your sodium intake lower too.

- Breads and rolls
- Cold cuts and cured meats
- Pizza
- Poultry
- Soups
- Sandwiches
- Cheese
- Pasta dishes
- Meat dishes
- Snacks

How to Reduce the Sodium in Your Diet

- Read Nutrition Facts labels on the foods you buy when shopping. This can help you find the lowest sodium choices of your favorite foods.

- Eat more fruits and vegetables—fresh, frozen (without sauce), or “no salt added” canned products. If you eat canned or processed foods, rinse them with water before you cook or eat them.

- Limit processed foods that are high in sodium (hot dogs, lunch meat, frozen pizza, and canned soups).

- When eating at a restaurant, ask for no salt to be added to your food. Ask for sauces or dressings on the side and just put a little on your food.

- Don’t eat snacks from a vending machine.

- Ask your nurse or doctor if you should avoid any medicines, especially “fizzy” ones that some people take for indigestion or headache. These may be high in sodium.

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The Sodium in Your Diet

What about seasonings?

- There is as much sodium in sea salt and Kosher salt as there is in regular table salt. Limit these just like you limit table salt.
- Salt substitutes: Ask your nurse, doctor, or dietitian if these are okay for you to use.
- Stay away from flavored salts, lemon pepper, garlic salt, onion salt, meat tenderizers, flavor enhancers, bouillon cubes, ketchup, mustard, steak sauce and soy sauce.
- Choose onion powder or garlic powder instead of garlic salt. Fresh herbs have no salt.

<table>
<thead>
<tr>
<th>Regular Canned Tomatoes</th>
<th>Low Sodium Canned Tomatoes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nutrition Facts</strong></td>
<td></td>
</tr>
<tr>
<td>Serving Size</td>
<td>Serving Size</td>
</tr>
<tr>
<td>½ cup (126g)</td>
<td>½ cup (126g)</td>
</tr>
<tr>
<td>Servings Per Container</td>
<td>Servings Per Container</td>
</tr>
<tr>
<td>3½</td>
<td>3½</td>
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<tr>
<td><strong>Amount Per Serving</strong></td>
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</tr>
<tr>
<td>Calories</td>
<td>Calories</td>
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<tr>
<td>25</td>
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<td>Calories from Fat</td>
<td>Calories from Fat</td>
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<td>% Daily Value*</td>
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<td>Saturated Fat</td>
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<td>% Daily Value*</td>
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<td>% Daily Value*</td>
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<td>Sodium</td>
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<td>6g</td>
<td>6g</td>
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<tr>
<td>Dietary Fiber</td>
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<tr>
<td>Sugars</td>
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<tr>
<td>Protein</td>
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<tr>
<td>Vitamin A</td>
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<td>10%</td>
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<td>Vitamin C</td>
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<td>Calcium</td>
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<td>Iron</td>
<td>Iron</td>
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<td>2%</td>
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</tr>
<tr>
<td>*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.</td>
<td></td>
</tr>
</tbody>
</table>

Here is an example of a food label that shows the difference between regular sodium (on the left) and reduced (low) sodium (on the right) canned tomatoes. See that there are 3½ servings (½ cup each) in each can. The food label tells you how much sodium is in one serving. A good rule of thumb is to try and eat nothing that has over 150mg of sodium in 1 serving.
HEART FAILURE SELF-CARE

Appendix F

Topic 5: Health Promotion Education Materials

HEART FAILURE:
SELF CARE- HEALTH PROMOTION

EXERCISE
Maintaining a healthy weight reduces the strain on your heart. If you are overweight, talk with your healthcare providers about weight loss options.

Regular exercise can improve your cardiovascular health and minimize symptoms of heart failure and risk of future cardiac problems. 20-30 minutes of a moderate-intensity activity, such as brisk walking or dancing, every day is typically the goal.
Before starting an exercise regimen, talk with your doctor/nurse to make sure this is safe.

SMOKING
If you smoke or use tobacco products, you should stop as this can place a strain on your heart and worsen heart failure.

If you need help quitting, talk with your healthcare providers.
(Or call the State Quit Line at 1-800-QUIT-NOW / 1-800-874-8667.)

ALCOHOL
If you drink alcohol, you should avoid excessive consumption. A maximum of one serving of alcohol per day is recommended (one serving = 12 ounces of beer OR 5 ounces of wine).

HEALTH MAINTENANCE
Be sure to see a primary care healthcare provider in addition to your cardiologist!

☐ Your primary care provider can help to make sure any other health conditions are managed well. Health promotion activities, such as keeping up to date with recommended vaccines (like getting the flu shot every year) are important to keep your body healthy and prevent illnesses that can worsen heart failure.

If you don’t have a primary care provider, let your cardiology team know and we can help you find one.

HVA Medical Group
Fair Lawn Office: (201) 475 – 5050
In case of emergency, dial 9-1-1
HEART FAILURE SELF-CARE

HEART FAILURE:

PHYSICAL ACTIVITY

Exercise recommendations are unique for each patient so it is important to discuss your exercise regimen with your cardiology healthcare team!

The following recommendations are general guidelines for an exercise regimen to guide your conversation with your healthcare providers:

EXERCISE SCHEDULE
- 20-30 minutes of exercise most days of the week is the goal.
- It’s okay to exercise in alternative schedules that add up to 30-minutes daily (such as three 10-minute blocks of exercise).

EXERCISE GUIDELINES
- Increase activity slowly, do not push your body beyond what it can handle! If you start to feel tired, take a break.
- Wear supportive, comfortable shoes to exercise – never backless shoes.
- Wait at least 60 minutes after eating to exercise since exercising with a full stomach may make you feel sick.
- Avoid outdoor exercise when it’s colder than 40° F or warmer than 80° F.
- Exercise when you have the most energy, for most people with heart failure, this is in the morning.
- Don’t exercise if you feel sick, more short of breath than usual, dizzy, or if you are very tired.
- STOP exercising if you feel very short of breath or experience chest pain.

HVA Medical Group
Fair Lawn Office: (201) 475 – 5050
In case of emergency, dial 9-1-1
- Pick an exercise activity you like, this way you are more likely to stick with the exercise regimen!
- **Walking** is a great exercise to try!
- **Walking intensity guideline:** generally, you should be able to carry on a conversation when walking.
- Start walking slowly and gradually increase the length of time and pace.
- **Avoid exercises that require holding your breath**, like push-ups, sit-ups, and other isometric exercises.
- Don’t forget to warm up before exercising and cool down after exercise. A 5-minute warm up and cool down is important to prevent sore muscles.
- Exercising with a friend/family member is a good idea since it can make exercising a fun social activity!
Enjoying Life While Managing Heart Failure: Get Walking

You can be physically active when you have heart failure. Ask your nurse or doctor if an organized cardiac rehabilitation program would be right for you. Physical activity and exercise will help you keep your heart strong and help you:

- lose weight or keep from gaining weight
- have more energy and feel better
- lower your cholesterol and keep your blood pressure healthy
- improve your circulation

Exercise Tips

- A good goal is to build up to walking 30 minutes every day, or on most days of the week.
- Always take 5 minutes to walk slowly to “warm up” and finish your walk with a 5 minute slow “cool down” walk.
- You can break the exercise into 10 minute periods three times a day.
- Start slowly and build up to walking longer as you get stronger.
- Wear a pedometer and record your steps or how far you have walked.
- Wear supportive shoes and comfortable clothing.

For Your Safety

- It is normal for your pulse rate and breathing to increase during exercise, but you should be able to pass the “talk test,” (carry on a conversation while exercising).
- Ask a friend or family member to exercise with you.
- Carry a mobile phone or let someone know your walking route.
- Don’t exercise if it is very hot or cold outside.
- Wait one hour after meals before exercising.
- If you become tired during activity, stop and rest.
- Do not lift, push or pull any object over 10 pounds.

Guidelines for daily activities

There are some simple things you can do to make housework and other daily tasks a little bit easier.

- Plan your daily activities ahead of time to better “pace” yourself. For example: do the laundry on one day and sweep the kitchen floor on another day.
- Do the things that take more energy when you are feeling your best.
- Rest before and after activities.

https://pcna.net/clinical-resources/patient-handouts/
## Physical Activity: Get Walking!

### Set goals and write down your steps/distance

<table>
<thead>
<tr>
<th>Week Day</th>
<th>Goal</th>
<th>Warm up</th>
<th>Steps/Distance</th>
<th>Cool Down</th>
<th>How I feel</th>
<th>Daily Activities Accomplished</th>
<th>What I need to finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example</td>
<td>I will walk ½ block today</td>
<td>Walked slowly 5 minutes</td>
<td>2000 steps</td>
<td>Walked slowly 5 minutes</td>
<td>Good, no shortness of breath</td>
<td>Laundry washed, dried, and folded</td>
<td>Put clean laundry away</td>
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**Questions I need to ask my nurse or doctor about my daily activity and walking:**  
_____________________________________________  
_____________________________________________  
_____________________________________________  
_____________________________________________  
_____________________________________________
Appendix G

Patient Education: Medication List (General Use/Use as Needed)

<table>
<thead>
<tr>
<th>Name of Medication</th>
<th>Strength &amp; Frequency</th>
<th>Condition Medication is for</th>
<th>Prescribed by</th>
<th>Notes</th>
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Appendix H

**American Heart Association Document (Included with All Topics)**

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**Excellent – Keep Up the Good Work!**

- No new or worsening shortness of breath
- Physical activity level is normal for you
- No new swelling, feet and legs look normal for you
- Weight check stable
- Weight: ____
- No sign of chest pain

**GREAT! CONTINUE:**

- Daily Weight Check
- Meds as Directed
- Low Sodium Eating
- Follow-up Visits

**Pay Attention – Use Caution!**

- Dry, hacking cough
- Worsening shortness of breath with activity
- Increased swelling of legs, feet, and ankles
- Sudden weight gain of more than 2-3 lbs in a 24 hour period (or 5 lbs in a week)
- Discomfort or swelling in the abdomen
- Trouble Sleeping

**CHECK IN!**

Your symptoms may indicate:

- A need to contact your doctor or provider
- A need for a change in medications

**Medical Alert – Warning!**

- Frequent, dry, hacking cough
- Shortness of breath at rest
- Increased discomfort or swelling in the lower body
- Sudden weight gain of more than 2-3 lbs in a 24 hour period (or 5 lbs in a week)
- New or worsening dizziness, confusion, sadness or depression
- Loss of appetite
- Increased trouble sleeping; cannot lie flat

**WARNING! You need to be evaluated right away.**

Call your physician or call 911

---

**Compliments of:**

HVA Medical Group

Fair Lawn Office: 201-475-5050

In case of emergency, dial 9-1-1

www.RiseAboveHF.org

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[https://www.heart.org/-/media/Files/Health-Topics/Heart-Failure/HF-Symptom-Tracker.pdf](https://www.heart.org/-/media/Files/Health-Topics/Heart-Failure/HF-Symptom-Tracker.pdf)
Appendix I

*American Heart Association Copyright Use Letter*

REQ #16912

March 23, 2021

Meredith Lubas  
For HVA Medical Group  
8 Bell Street  
Montclair, NJ  07042

RE: print/distribute the AHA Infographic listed in Exhibit A on page 2 below, to patients with heart failure, for educational purposes only

Dear Ms. Lubas:

Thank you for contacting the American Heart Association. We have completed the review of your copyright permission request and it is allowable for you to print and distribute the above referenced material for educational purposes only. The material needs to be printed just as it is with no changes, additions or deletions. The material must be printed with the AHA copyright notice on it. There will be no processing fee or license agreement required for this so please accept this letter granting permission for you to print/distribute the material as referenced above.

It is important that you check the AHA/ASA web site often because the Patient Information material is continually being updated and the ones that contain old science will be deleted from the web site and distribution should be discontinued immediately.

American Heart Association materials are developed for educational non-profit use only. We do not allow use of AHA materials to promote commercial products or organizations or to imply an endorsement of, or affiliation with, any particular organization, service or product.

The AHA copyright policy prohibits the use of logos, other than the AHA/ASA logos as they appear on the material, but you may add a “stick-on” label with your contact information (i.e. name/phone #/ address), to the pages, if you would like. We suggest wording
similar to “compliments of HVA Medical Group”.

If you have any questions, please feel free to contact me.

Sincerely,

Jamie R. Page

Ms. Jamie R. Page
Copyright Permissions Specialist
CEO/Legal Department

EXHIBIT A

Rise Above: Self-check Plan for HF Management located @
https://www.heart.org/-/media/files/health-topics/heart-failure/self-check-plan-for-hf-
management-477328.pdf?la=en
Appendix J

HVA Medical Group Logo Use Approval

November 17, 2021

To Whom it May Concern:

It is allowable for Meredith Lubas to use the HVA Medical Group logo/branding on patient education materials and documents associated with the Promotion of Heart Failure Self-Care in the Outpatient Setting initiative.

Sincerely,

Mahesh Bikkina, MD, MPH, FACC, FSVM, FSCAI
President, HVA Medical Group