Implementing a Follow-up Discharge Program in an Acute Care Hospital in California Aimed at Reducing the 30-Day Readmission Risk in Patients with Congestive Heart Failure

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Abstract

Problem Description

The problem is the risk of readmission in patients with congestive heart failure (CHF) within 30 days upon discharge from an acute care hospital in California.

Background

Readmission is a common problem that has equally attracted the attention of policymakers and researchers because it is a source of poor quality of care and an adjustable cause of high medical costs (Ziaeian & Fonarow, 2016). Congestive heart failure is the leading diagnosis for readmission followed by chronic obstructive pulmonary disease (COPD) and pneumonia. Implementing a follow-up discharge program for CHF patients is intervention aimed at reducing the risk of readmissions for such patients.

Method and Intervention

A discharge follow-up program was implemented for the staff that care for CHF patients at the project site. It included educating the registered nurses on discharge planning, who then educated their patients about the process of disease (CHF), signs and symptoms to report, diet, medication compliance. The registered nurses also completed a follow-up phone call one day after discharge (Chava et al., 2019). Date of previous discharge date and the readmission date was collected and reviewed. A chart review on previous admission and plan of care including discharge instructions was also collected and analyzed for clinical and statistical significance using descriptive statistics and a paired *t*-test.

Results

According to the project's findings of a decrease in the readmission rate. It was established that an implementation of a discharge follow-up program that included patient

education and a phone call follow-up resulted in a significant reduction in the rate of readmissions among patients with CHF.

Conclusions

Based on the project results, a follow-up discharge program should be implemented to reduce the readmission risk among patients with CHF. In this regard, there is a need to ensure nurses are well trained on discharge planning in tandem with project and the literature. The project is important to the practice site and systems at large as its findings could be used to facilitate the translation of knowledge to deliver the evidence-based intervention – discharge follow-up (Chava et al., 2019). The findings of this project could also be used to guide further research.

Keywords: discharge follow-up, congestive heart failure, hospital readmissions, reduce the risk of readmissions.

Implementing a Follow-Up Discharge Program in an Acute Care Hospital in California to Determine its Effectiveness in Reducing the Risk of Readmission in

Patients with Congestive Heart Failure Within 30 Days of Discharge

Managing Congestive Heart Failure (CHF) has improved over the years; however, the condition remains one of the leading diagnoses for hospitalization. CHF prevalence is projected to increase by 46% from 2012 to 2030, translating into more than eight million adults with the condition (Ziaeian & Fonarow, 2016). In approximately six million Americans with CHF, hospitalization rates are estimated at 18 in 1000 patients above 65 years, translating to about 700,000 hospital admissions per year (Mirkin et al., 2017).

Khan et al. (2021) indicate that the rates of adjusted 30- and 90-day readmissions caused by CHF and other causes have been rising. Approximately a quarter of the patients hospitalized with CHF are readmitted within 30 days of discharge, while about a third are readmitted within 90 days (Mirkin et al., 2017). Readmission rates were noted to be higher in the Hospital Readmission Reduction Program (HRRP), which aims to reduce preventable hospital admissions by penalizing hospitals with relatively higher rates of Medicare-insured readmissions. Implementing a follow-up discharge program in patients with CHF and educating the patients on disease process, diet, signs, and symptoms to look for, medication compliance and follow-up call one-day post-discharge will decrease readmission.

Background

Readmissions attract significant attention from both researchers and policymakers as it is a modifiable cause of high medical costs and a source of poor quality of care (Ziaeian & Fonarow, 2016). The cost of CHF is substantial as it was estimated at $30.7 billion in 2012 in the United States (Ziaeian & Fonarow, 2016).

In October 2012, the Centers of Medicare, and Medicaid Services (CMS), identified three

top diagnoses for readmissions into the hospital in less than thirty days. The diagnosis was Chronic Obstructive Pulmonary Disease, Pneumonia, and Congestive heart failure. Among these most frequent conditions, Congestive Heart Failure was the top diagnosis for readmission. CMS decided to penalize hospitals for readmissions by not reimbursing the hospital on any Medicare patient readmitted with this diagnosis. The CMS purposed a Hospital Readmissions Reduction Program (HRRP). In this proposal, any hospital with excessive readmission rates for the three-diagnosis listed above will reduce their Medicare reimbursement under the Inpatient Prospective Payment System (IPPS).

Management of heart failure is a costly affair. In 2012, it was estimated that about $108 billion was utilized mainly to cater to the medical costs of managing heart failure globally (Ziaeian & Fonarow, 2016). The CHF costs are on the rise and are expected to keep increasing. According to Ziaeian and Fonarow (2016), the main area of expenditure is on hospitalizations. The estimated cost of admission for a CHF patient is $10,775, based on 2011 data (Ziaeian & Fonarow, 2016). Given the complexity of CHF, the treated patient may have an exacerbation of CHF a few days after discharge or even get other complications that could lead to their hospitalization (Ziaeian & Fonarow, 2016). Therefore, efforts to reduce re-hospitalizations can significantly reduce expenses on CHF (Ziaeian & Fonarow, 2016).

Heart failure is a chronic stage of various cardiac diseases. It can be defined as a complex condition mainly characterized by impairment of ejection of blood or ventricular filling that could be due to functional or structural changes (Conrad et al., 2018). Heart failure is a non-specific cause of death because an underlying condition that accompanies it; therefore, determining its mortality rate can be misleading (Ong et al., 2016). However, based on age-adjusted all-cause cardiovascular mortality rate data, few people have CHF associated with their

death currently (293.2 deaths per 100000 person-years in 2013) compared to a decade ago (375.5 deaths per 100000 person-years in 1990) (Ziaeian & Fonarow, 2016).

Less than thirty days of readmission was thought to be caused by less than adequate care, failure to follow discharge instructions, poor coordination of care after discharge, and early discharge before the patient is adequately stable.

Implementing a follow-up discharge program for patients discharged home with a diagnosis of CHF will decrease' hospital readmission. The follow-up discharge program will include before discharge medication reconciliation; here, we will discuss the patient's medication, uses, side effects and adverse reactions, and any food and drug interactions. The patient will receive a follow-up phone call twenty-four hours after discharge. The patient will be given a phone number for a twenty-four-hour nurse line. The patient will receive a scale, and nutrition pamphlet, we will conduct weekly home visits to ensure the patient has everything they need to remain home. Currently, at the hospital where I will implement this program, the readmission rate is 21.9%, with the national average rate being 14.9%. After speaking with Dr. Britton, the Chief Nursing Officer at the hospital, it was decided that this facility will benefit from a follow up discharge program.

Project Question

P- Registered Nurses, Charge Nurses, Case Managers, Discharge Planners, and Director of the Telemetry Unit.

I-Patient education on disease process, diet and medication compliance, signs and symptoms to report, daily weight, and follow-up phone calls one-day post-discharge.

C-Current readmission rates.

O-Decrease in readmissions rates in patients with Congestive Heart Failure.

T-Four weeks.

Literature Review

Search Methods

A literature search was conducted on PubMed to identify studies on follow-up after discharge from the hospital for patients with congestive heart failure. An initial search on the database revealed two studies matching the phrase follow-up after discharge from hospital for patients with heart failure. A further search was completed using the same database and the phrase follow-up after discharge from the hospital for patients with heart failure and readmission within 30 days. The application of filters to identify randomized controlled trials (RCTs), studies published within the last five years, and free-full text articles revealed five studies included in the literature review.

Review of Study Methods

Among the five selected studies, three were RCTs, one was a qualitative study, and another was a pragmatic randomized trial. The study methods are relevant to the DNP project as they offer reliable data on the extent to which follow-up interventions reduce the rate of readmission within 30 days of discharge in patients with CHF.

Review Synthesis

Transitional Care Model

According to Oscalices *et al.* (2019), the Transitional Care Model was designed to prevent health complications and re-hospitalizations in chronically ill, elderly hospital patients by providing comprehensive discharge planning and home follow-up, which is coordinated by a master's-level Transitional Care Nurse who is trained in chronic condition care. Kumari *et al.,* (2017) confirmed that Nurses: conduct comprehensive assessments of the patients' health status,

health behaviors, level of social support, and goals during hospitalization; develop individualized plans of care in collaboration with the patient and her doctors, focusing on optimizing patient health at discharge; and lastly conduct daily patient visits, focusing on optimizing patient health at discharge.

Van Spall et al. (2019) assessed whether the implementation of a group of evidence-informed transitional services in a public healthcare system improves outcomes for patients discharged following hospitalization for CHF. The trial included 2494 patients and was conducted in ten hospitals in Ontario, Canada (Van Spall et al., 2019). There were no significant differences in outcomes for patients receiving a transition care program than those on usual care (Van Spall et al., 2019). It demonstrated that a patient-centered transitional care model was ineffective in improving clinical outcomes following discharge from hospital after hospitalization with CHF.

Discharge Education

According to Kumari *et al.,* (2017), discharge planning and education are essential components of high-quality patient care. These factors guarantee that patients' needs are satisfied when they leave the hospital and that they can function at their best at home. Activities related to discharge education are discussed below.

Healthcare System Issues

Staffing is a major concern in the healthcare system. According to Ziaeian & Fonarow (2016), appropriate personnel is required to provide relevant and targeted discharge education. Nurses are better equipped to give more effective discharge planning when s suitable staffing. Nurse leaders can make smart nursing resource management decisions by leveraging staffing data systems. Data management solutions give useful information about staffing mix and ratios,

but they also help the nursing leader make decisions. Nurse leaders must make the best judgments possible based on their data to improve quality healthcare outcomes.

Family and Patient Readiness

According to Bradley *et al.* (2013), recognizing a patient's and family member's readiness to learn is an important part of discharge education. Nurses must assess learning requirements for discharge planning and education. Based on the patient's evaluation, readiness to learn, and patient and family requirements, individualized education and planning needs should be prepared. According to nurse leaders, clinical nurses must appropriately assess the patient's readiness to learn. Strategies for assessing a patient's willingness to learn may also be used to examine a nurse's evaluation of a patient's readiness to learn. Observing discharge education is one approach to achieve this.

Discharge Follow-up

Oscalices et al. (2019) evaluated the effectiveness of discharge guidance and telephone in therapeutic adherence, re-hospitalization, and mortality in patients with CHF. They used RCT without blinding and included 201 patients diagnosed with CHF and admitted to the hospital. Specific discharge guidance was implemented in the intervention group, where patients were called to address questions through phone calls after 7 and 30 days. Apart from improving therapeutic adherence, the intervention was lower re-hospitalization and death (Oscalices et al., 2019). The study demonstrated the need for discharge guidance that includes follow-up phone calls.

The most prevalent reason for re-hospitalization among the elderly is congestive heart failure (CHF), accounting for one-fifth of all hospital admissions. There has been no study to date that compares the re-hospitalization rates of patients with CHF who get telemedicine and

home health nursing care to a multidisciplinary team that includes telehealth, home nursing, physical therapy (PT), and occupational therapy.

Martin *et al.* (2017), over a year, researched the prospective aspects of tele-health where one hundred and thirty-two Medicare Part A home health patients discharged from an inpatient setting with a main or secondary diagnosis CHF who received daily telehealth were studied retrospectively. Data from patient records was queried using All-scripts Home Care and Lifestream software. The Cochran-Mantel-Haenszel tests were used to look at re-hospitalization rates. Nursing alone, nursing and physical therapy or occupational therapy, or nursing, physical therapy, and occupational therapy were the three categories of patients. During their 60-day home health treatment episode, 41 of the 132 patients (31.06%) were re-hospitalized. This statistic covers re-hospitalizations for any reason. After adjusting for confounding characteristics such as numerous hospitalizations (P =.15), history of falls (P =.16), and depression (P =.18), Cochran-Mantel-Haenszel tests revealed no differences in re-hospitalization rates across the three groups.

Lee et al. (2020) evaluated the effectiveness and efficiency of structured telephone visits through a pragmatic RCT. The study compared the usual care strategy facilitated by a physician and an initial structured telephone visit facilitated by a non-physician under physician supervision (Lee et al., 2020). It included 2091 eligible patients randomly assigned to the treatment, The results indicate that telephone-guided follow-ups can reduce early visits as they serve as a triaging patient without sacrificing clinical outcomes. The study demonstrated the value of follow-ups in patients with CHF. Chen et al. (2019) assessed the impact of post-discharge short message service, including a conversation with a live person on short-term clinical outcome and self-care behavior in chronic CHF. The RCT was conducted between

December 2011 and September 2015 (Chen et al., 2019). Post-discharge short message service (these are inquiry messages of patient's health after discharge that is normally between nurses and the patient's caregivers at home) was as efficient as structured telephone support (Chen et al. 2019). The researchers indicate that post-discharge SMS should be incorporated into the management of CHF as it is associated with readmission-free survival and improved self-care behavior. The study demonstrated the value of interactive and tailored technologies in tackling the problem of readmissions in patients with CHF.

Evidence on the Value of Transitional Care Services Remains Mixed

While some studies indicate the value of follow-up interventions after discharge after being hospitalized with CHF, others indicate that follow-ups do not significantly influence such outcomes as 30-day readmissions. Van Spall et al. (2019) found that their transitional patient-centered approach did not result in significant differences in outcomes compared to patients receiving usual care. Griffiths et al. (2021) reinforce this finding by indicating uncertainty on whether post-discharge visits are associated with a decrease in the risk of readmissions, especially in patients who can self-triage based on their symptoms. Although the two studies listed above indicated opposing opinions, it has been concluded that neither resulted in differences in outcomes. In contrast, the project that I propose will address these issues outright to decrease readmissions.

Project Aim

This project aims to reduce 30-day readmissions among CHF patients discharged from a rural community hospital in California.

Project Objectives

In the timeframe of this DNP Project, the host site will:

1. Implement a follow-up phone call protocol to facilitate the identification of CHF patients at risk of 30-day readmission after discharge that would aid in the medical follow up prospects across the country in the coming years.
2. Administer education at discharge to improve patients' awareness of the CHF danger signs to look out for to facilitate self-triage within 30 days after discharge.
3. Provide education to improve nurses' knowledge of post-discharge patient education and the follow-up phone call protocol for CHF patients, as evidenced by an improvement in the posttest knowledge assessment.
4. Review discharged patients' date to evaluate the effectiveness of post-discharge education and phone calls in reducing the risk of readmission within 30 days of discharge.

Theoretical Framework

The Knowledge to Action (KTA) framework will be used to implement the DNP project.

Historical Development of the Theory

The model was developed in Canada by Graham and colleagues in the 2000s following a review of 31 planned action theories. It has two components: knowledge creation and an action cycle (Field et al., 2014). Knowledge creation is divided into three phases: adapting the information to the specific situation, identifying, and evaluating the obstacles, and finally, facilitation of knowledge usage (Field et al., 2014). Field et al., (2014) further clarifies that the action cycle, on the other hand, is divided into three phases: identifying the problem or issue that the researcher wishes to solve, choosing knowledge to handle the problem or issue, and finding the gap between knowledge and practice.

Application to DNP Project

The KTA Framework, as shown in Appendix A, applies to the proposed project as it facilitates the translation of knowledge to deliver evidence-based interventions. The proposed project will include knowledge synthesis, dissemination, and exchange in ethically sound ways to offer health services intended to improve CHF management following hospitalization to reduce the risk of readmission within 30 days. The phases in the framework include identifying the problem; reviewing and selecting knowledge to implement; customizing the knowledge to local context; assessing the determinants of knowledge use; selecting, tailoring, implementing, and monitoring interventions associated with knowledge translation; evaluating outcomes; and determining the strategies for sustained use of the knowledge (Field et al., 2014).

This project was identified by reviewing evidence on the efficacy of follow-up programs on patients admitted to the hospital with CHF to reduce the risk of readmission within 30 days of discharge. Next, the burden of the problem was demonstrated through literature synthesis. A discharge project with follow-up phone calls and education at discharge will be adopted, implemented, and outcomes evaluated. The additional steps in the action cycle, namely determining the strategies for long-term use, will be beyond the proposed project's scope.

DNP Project II: Section I Proposal

Project Setting

The main project site is a small community hospital in Southern California, with a compacity of 117 beds. It offers various services on different units, including Emergency, Telemetry, Surgical, and Intensive Care services. Specifically, the project will take place in the Telemetry unit. The Telemetry unit has the compacity to house 24 patients. Twenty of which are monitored beds and the other 4 are unmonitored beds primarily used for medical surgical overflow. The daily census on this unit is 18-22 patients.

Mainly, the project will deal target patients discharged from the Telemetry unit at the project site. Thus, it will rely on using Paragon system, as the primary documentation system (Edwards et al., 2018). The Paragon system will help in accessing and applying patient information, for example, discharge dates, current medication, and treatment requirements. The system will help in tracking patients' health condition in progress, experiences, and even challenges after discharge.

Population of Interest

Notably, the project's primary population of interest will be Case managers, Registered Nurses assigned to the Telemetry unit, Charge Nurses, the Director of the Telemetry unit, Discharge Planners, the Case Manager Coordinator, and the Nurse Educator. The indirect population of interest will be the CHF patients who have been discharged from the hospital.

Participants will be included in the project if they work on the Telemetry unit as a full-time Registered Nurse, or are a case manager, discharge planners, and case manager coordinators currently employed at the time of the project. The Chief Nursing Officer, Director of Telemetry, and the Nurse Educator will also be included. The Director of Medical Surgical Services,

Director of Emergency and Intensive Care Services, contracted nurses and all per-diem staff will be excluded from the project because the areas of expertise and lack of training on the project.

Stakeholders

Project stakeholders are the Chief Nursing Officer (CNO), Director of Case Management, Director of Telemetry, Registered Nurses assigned to the Telemetry unit, Register Nurse Case Managers, Charge Nurses on Telemetry, Discharge Planners, Case Management Coordinators, Nurse Educator, and the Chief Financial Officer.

The CNO will conduct several meetings with the other stakeholders listed above. The meetings will be held weekly in planning for implementation. The Case manager Coordinator will be responsible for reviewing the daily hospital census and extracting data on patients that are readmitted within 30 days of discharge. The CNO and the Director of Case management will assure daily access to the Paragon system.

The project will not need permission for the project, there is an affiliation agreement in place. Thus, there will be a need to seek an affiliation agreement with TUN to complete the project. Permission has already been given from the Chief Nursing Officer to conduct this project.

Project Plan: Interventions and Tools

The follow-up discharge program in the acute care hospital in California will utilize quantitative methodology and a quasi-experimental research design. The quantitative methodology will involve analysis of collected data through questionnaires, and use of data obtained. The quasi-experimental design will involve using the independent variable without assigning random conditions to the participants, in particular the pretest-posttest design. This section explores the plan for the intervention and the activities during the implementation.

Patient Selection

Patients will be identified during hospitalization before they are discharged from the acute care hospital. The hospital census will be used to identify the patients, and this list will be reviewed once every week. Only patients admitted to the Telemetry Unit and hospitalized for CHF will be included. The patients will be informed verbally about the project; its purpose and will be allowed to ask any questions. Only patients with the capability to read, understand and speak English, and those discharged home will be included. The exclusion criteria will involve patients who cannot speak or understand English, those discharged to a Skilled Nursing Facility (SNF), and patients with no recent admissions with CHF. Patients hospitalized for more than 5 weeks will not be eligible for inclusion. The ineligible patients, hospitalized for more than 5 weeks will receive the education, but no follow-up will be completed.

After signing the consent form, patients will give their valid telephone numbers, and be given a demographic questionnaire (see Appendix C). The demographic questionnaire will enable the identification of each participant with their gender, and age. Also, the questionnaire will enable identifying the possible variables for observing patients' rates of readmissions for

CHF. No compensation or cost will be incurred or given to the patients. A sample size of 30 participants will be involved.

Implementation of the Intervention

The implementation of the follow-up discharge program and evaluation of the outcomes will take 5 weeks. In the first week, the nurses will be educated on the project with written literature. A pre/posttest regarding their experience with discharge will be assessed (Appendix D). The project team will provide a brochure on patient teaching with CHF (Appendix G). Education will include discharge instructions and follow-up phone calls. The week two through five will involve the discharge of patients and beginning follow-up phone calls and obtaining consents from the patients. The patients will receive a follow-up phone call twenty-four hours after discharge. The patient will be given a phone number for a twenty-four-hour nurse line. The patient will receive a scale and a pamphlet (Appendix E) provided by the hospital at the bedside prior to discharge.

Evaluation of Interventions

A chart review (Appendix F) will be reviewed pre/post interventions to determine if there was a reduction in readmission in patients with CHF.

Tools

The implementation and evaluation of the follow-up discharge program will utilize two (2) tools. These include the Telephone Follow-up form (Appendix B) and Demographics Questionnaire (Appendix C). First, the telephone follow-up form will have the following sections to fill general information about the patients, patient education information, medication for self-managing CHF, and interview instructions. This tool will be referred to in this project as the "telephone follow-up form." The tool was adopted from the American Heart Association's

guideline initiatives recommended for conducting phone call follow-ups on patients with heart failure, and their caregivers after the patient's discharge from the hospital (AHA, 2013). The tool does not require permission.

The rationale for using the telephone follow-up form is for its flexibility in modifying, omitting, or adding questions according to the care provider's desired objective of collecting given patient data. Also, several studies find the telephone follow-up form valid and reliable in monitoring heart failure (Lee et al., 2016; Negarandeh et al., 2019; Xu et al., 2022). For instance, Negarandeh et al. (2019) established that telephone follow-up tools improved patients' self-efficacy and self-management behavior or heart failure.

The telephone follow-up will contain 10 questions based on the AHA template. It will allow calling patients weekly during the 5 weeks of discharge. The questions will be formulated in a way the patient will answer in short sentences fostering communication. The first phone call will take place after 24 hours of discharge, during week 2. The second call will be made in week 2; the third call will take place in week 3, and the fourth call will be made during week 4. The telephone follow-up form will have questions about the disease process, diet and medications compliance, signs and symptoms of CHF, daily weight monitoring, and exercises. The demographics questionnaire will be filled out once during week 1, prior to discharge. It will be used to identify and organize the data collected from the respective patients.

Study of Interventions/ Data Collection

The participants will be selected through an open forum for volunteers to participate in the project and face-to-face education sessions during the first week. The nurses will receive the educational materials and undergo the initial training preparation. Although the nurses will undergo the educational program, its purpose will be to prepare them to educate the patients. The number of nurses educated will be collected during the education sessions.

Patient data will be collected using the questionnaire templates during the daily visits at the project site, starting week 1 after the educational sessions. The number of patients educated by the nurses about medication, use side effects and adverse reactions, and any food and drug interactions for patients with CHF and demographic data of the patients will be collected via chart review.

Several types of data will be collected using follow-up phone calls based on the questionnaire template. The number of participants who receive the phone calls will be recorded. These participants will be categorized as to whether they received the call once, twice, or did not receive the phone calls. Data about the reason for participants not receiving the phone calls will be recorded. For instance, when the patients fail to receive the phone calls because they were discharged to a rehabilitation facility, or another hospital, rather than being discharged at home. Another set of data includes the number of patients' readmissions in terms of days. Also, the number of readmissions after the phone calls, and readmissions after failing to answer the phone calls.

The second week will involve conducting chart reviews, which will be done daily. The number of charts will depend on the number of patients readmitted with CHF. The data for chart reviews will be rates of patients' readmissions. The process of filling questionnaire template will be done

weekly up to week 5. In week 5, the data about rates of readmissions will be collected. The data collected before the implementation of the discharge program (week 1) will be recorded as pre-data, and the data collected in week 5 will be recorded as post-data. All the data collected will be recorded in excel spreadsheets for analysis.

The collected data will be coded and recorded in a database, containing the patients' unique codes. The data will only be accessible to the project implementer (PI) and the project mentor. The computers containing the data will have a password, and the data of each patient will only be traceable using the assigned codes, and not their names or personal information. These will ensure the safeguarding of privacy, and confidentiality of the patients. The documents of the questionnaires will be kept for three years after the dissemination of the findings. The data will be preserved in a locked cabinet, only accessible by the PI. The data will be disposed of based on the ethically accepted procedures for data management. For instance, paper copies will be shredded, and the electronic data will be erased from the hard drive and cleaned from the trash bin by the Information Technology (IT) department.

Ethics/Human Subject Protection

The participants in this project are clinical and non-clinical staff from the project site (the nurses, case managers, discharge planners, the Director of the Telemetry unit, and the Director of Education), and thus ethical consideration for human protection is necessary. Both the patients and the care providers are human subjects and deserve protection from any harm during and after the project. However, the site does not require written informed consent and the participants will be verbally informed about the details and the purpose of the project to make informed decisions. They will be assured of participation without coercion. Participants will have the right to withdraw freely from the project without any consequence if they no longer wish to be involved.

The participants will be recruited based on their employment status, full time and part time nurses with one year experience will be given priority.

Also, the participants will be introduced to the benefits and risks of the project (Hall et al., 2020). The potential risks to the participants may be during telephone communication; however, there is a minimal level of harm. They may be at risk of their identity being revealed while talking with patients, however, project interventions fall within the normal scope of practice for the participants. The benefit of this project is to improve the discharge planning process to decrease the readmission rate in patients with Congestive Heart Failure. The participants will benefit from gaining knowledge of discharge planning and educating patients at discharge.

Touro University Nevada does not require Institutional Review Board (IRB) approval. This project is considered a Quality Improvement project. The project site does not have an IRB or a Quality Improvement process. Permission to implement the project was approved by administration at the project site.

Measures/Plan for Analysis

SPSS version 28 will be used for all the statistical tests. The collected data will be compared with rates of readmissions of the CHF patients. Much of the data collected using the questionnaire will be observed in terms of its causal link with the rates of readmissions. The pre-data will be compared with the post-data to determine the change (either increase or decrease) in the readmission rates between week 1 and week 5. Descriptive statistics will be used to describe the demographic attributes of the sample such as the gender, age, occupation, and education level. These will show the cohort of patients involved in the intervention. To check whether the educational program was effective in reducing the rates of readmission, the mean of pre-

intervention rates will be compared with the means of post-intervention rates for each week using paired *t*-tests at 0.05 *p* value. The mean scores will also be used to calculate the percentage increase or decrease in the rates of readmission. For evaluation of the follow-up discharge program, decreased readmissions in week 5 will indicate that the program is effective. Increased rates of readmission will be concluded that the program is ineffective and needed modification or readjustments.

An assumption made for the t-tests is that the readmission data is normal distributed. The Shapiro-Wilk test will be used to assess whether this assumption has been met. A *p*-value of 0.05 will be used. In case the assumption will not be met, a non-parametric test such as Mann-Whitney U test will be used for the comparisons of the readmission rates.

Analysis of Results

Participants Demographics

Patient Participants

Many of the participants (60%) are retired. They are followed by (22%) patients that work some. Only 18% of the patients work part time. Most of the patients in the project (54.17%) are male, while the rest (45.83%) are female. Most of the patients that participated in the project (41.67%) were older adults that are (65-85) years of age. This was followed by adults aged 55-64 (37.50%) and 50-54 (20.83%). Most of the patients (54.17%) in this project were high school graduates, followed by 29.17% having some college education and 16.67% were college graduates. The patient participants demographics data is summarized in Table 1.

Table 1

Patient and Staff Participant Demographics

	Participants(n=26)		Total Sample (n=26)
Characteristics	Participants *(%)*		
Age			
50-54	*7 (26.9%)*		
55-64	*9 (37.5%)*		
65-85	*10 (47.6%)*		
Gender			
Female	11 *(45.8%)*		
Male	13 *(54.1%)*		
Highest Education Level			
High School Graduate	13 *(54.1%)*		
Some College	7 *(29.1%)*		
College Degree	4 *(16.6%)*		
Staff Educated	Participants	Non-Participants	Total Sample (n=22)
Registered Nurses	11(50.0%)	11(50.0%)	22(50.0%)
Case Managers	4 (18.8%)	2(9.0%)	6(27.2%)
Discharge Planners	3 (13.6%)	1(4.5%)	4(18.1%)
Director of Education	1(4.5%)	0(0%)	1(4.5%)

Director of Telemetry Unit	1(4.5%)	0(0%)	1(4.5%)
Care Coordinator	2(9.0%)	1(4.5%)	3(13.6%)
Secretary	1(4.5%)	1(4.5%)	2(9.0%)

Telemetry Unit RN's and Staff

This project involved educating the nursing staff on discharge planning for patients with Congestive Heart Failure. There was a total of 22 staff members educated in this project, that's 50% of the staff that works for the Telemetry unit. Most of the staff (50%) were registered nurses (RN's) responsible for educating the patients on discharge instructions, medication side effects, nutrition, and signs, and symptoms to report. Case managers and discharge planers made up of 35% of the participants educated. The case managers were responsible for follow up phone calls post discharge and making appointments with the patient's primary physician prior to discharge if needed and ensuring that the patient received all quality care during the admission and discharge was appropriate. They also conducted chart reviews and tracked readmissions. The discharge planners track and trend all the admissions and readmissions. They also were responsible for educational pamphlets that were available for distribution to the nurses. The Director of Education and the Director of the Telemetry unit made up 9% of the participants. They were responsible for educating the staff and assuring that all the education sessions were completed. The two care coordinators, secretary made up of 14% of the participants and they

were responsible for collecting the daily census, chart reviews, document on the excel spread sheet the patients that were discharged and readmitted within thirty days.

Protocol Compliance and Readmission Rates

Twenty-six CHF patients were included in the project (See Table 1). All patients were educated (100%) and 19 (73%) received follow- up phone calls. Week 1 had the lowest number of telephone phone calls. From week 2 onwards, the follow-up phone calls were almost equal to the number of patients that were educated. The portion of patients that received follow-up phone calls throughout the four-week intervention stood at 73.08%.

The primary outcome of the study was to reduce the readmission rate among patients diagnosed with CHF. During the implementation of the intervention, the readmission rate was 7.69%, as only 2 out of the 26 patients that were educated were readmitted. A summary of the chart review data is shown in Table 2.

Table 2

Staff Compliance with Protocol and Readmission Data

Summary of the Collected Data				
Week	Number of Charts Audited	Number of patients educated	Number of patients that received a follow-up phone call	Number of readmissions

1	5	5	1	1
2	7	7	5	0
3	8	8	7	0
4	6	6	6	1
Total	26	26 (100%)	19 (73.08%)	2 (7.69%)

Paired Sample t-test

The mean and standard deviation of the average monthly readmission rates before the CHF intervention were 4.4 days and 1.79 days. After intervention, the mean average monthly readmission was 2.9 days with a standard deviation of 1.53 days. As summarized in Table 3.

Table 3

Paired Sample t-test

Paired Samples Statistics				
	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 Average monthly readmission rates before intervention.	4.4167	24	1.79169	.36573
Average monthly readmission	2.9167	24	1.52990	.31229

rates after intervention.

A paired sample t test was used to measure if there was a significant improvement in CHF readmission rates post-intervention. Results were as follows *t (23) =3.674, p=0.001.* Since the computed $p<0.05$, the null hypothesis is rejected. The results suggest that the intervention significantly reduced the average monthly readmission rates for CHF patients. The education of the patients and the high rate of follow up phone calls may have contributed to the clinically noticeable drop in the readmission rate among CHF patients. All assumptions were addressed, the data was normally distributed, no violations occurred. As summarized in Table 4.

Table 4

Paired Samples t-test

	Paired Sample *t* test					*t*	df	Sig.(2-tailed)
	Mean	Std.Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Average monthly readmission rates before intervention. Average monthly readmission rates after intervention	1.50000	2.00000	.40825	.65547	2.34453	3.674	23	.001

$p<0.05$

Summary

The main takeaway from this project is that educating the nurses on discharge would improve the readmission rate. The main weakness of the project is that the sample size used was relatively small. Secondly, the duration used in assessing the readmission rate was rather short. A longer duration should be considered in future projects. The main strength of the project shows a difference in educating nurses on discharge planning reduces hospital readmissions in patients with CHF.

Interpretation

The project aimed to determine whether patient education and phone call follow-up would result in a decreased rate of readmissions among CHF patients. The findings of the project show a notable drop in the readmission rate during the implementation of the project. The findings of the project reinforce the value of training nurses on discharge planning in line with findings from previous studies. Henke et al. (2017) revealed that discharge planning quality led to lower rates of 30-day hospital readmission. Gonçalves-Bradley et al. (2016) also demonstrated that discharge planning was associated with lower hospital readmission rates. The findings from the current project highlight the value of integrating discharge planning training targeting nurses who serve CHF patients in reducing the readmission rate.

There are several clinical and economic benefits of the reduced readmission rates arising from the use of educational intervention. First, the reduction in the readmission rates would reduce the cost of care for CHF patients. Every admission adds to the cost of the disease due to the need for specialized care. Thus, reducing readmission has the effect of lowering the financial cost of the disease. Secondly, reducing readmission has the effect of improving the quality of life among CHF patients. Patients who are admitted for CHF suffer a dip in their quality of life due to the concerns they may have about their health. The psychological and physical toil associated with readmission erodes the quality of their life. Lastly, reducing readmission can help improve the productivity of CHF patients. CHF readmission often translates to a loss of productivity. Therefore, reducing these readmissions can minimize the loss of productivity among these patients. It also allows the hospital to maintain adequate reimbursement.

Limitations

The project has a high risk for bias given its reliance on one database. A literature search to identify studies on follow-up after discharge from hospital for CHF patients was performed PubMed. Initially, the search on this database revealed only two studies that matched the key search term. This kind of a search augments the risk of bias in evidence selection as it fails to identify all the data available on the subject under study.

The project small sample size was also a limitation. The quantitative project design needs a large sample size for more reliable results. Generally, small scale quantitative research projects are characterized by low data quantity; thus, making them less reliable and study findings less generalizable (Ross & Zaidi, 2019). Meanwhile, using a large sample size is time consuming; hence, the project would take a lengthy period to implement, but it would minimize such limitations. This project could also have had social desirability bias. This project was conducted at one hospital, which makes the findings not generalizable to all CHF patients in California.

Conclusion

Readmission is a common problem after the discharge of patients hospitalized for CHF, COPD, and Pneumonia, among other health conditions. Studies has shown that readmissions are a major cause of poor care quality and high medical costs for patients and health care systems. This project established that implementing a discharge follow-up program for CHF patients reduced the risk of readmission. Recommendations include educating or training the nursing staff on discharge planning for CHF patients. In this regard, the project is useful in the sense that it supports the significance of educating nurses on how to plan discharge and make follow-up phone calls to CHF patients after their discharge from hospital. Having proven that discharge

planning resulted in reduced rates of 30-day hospital readmission, implementing a discharge follow-up is a sustainable endeavor with noteworthy implications for the nursing practice and policy. The findings could be adopted and implemented as evidence-based practice and used to guide the formulation of a policy whose goal is to keep the rate of readmissions in within the national benchmark.

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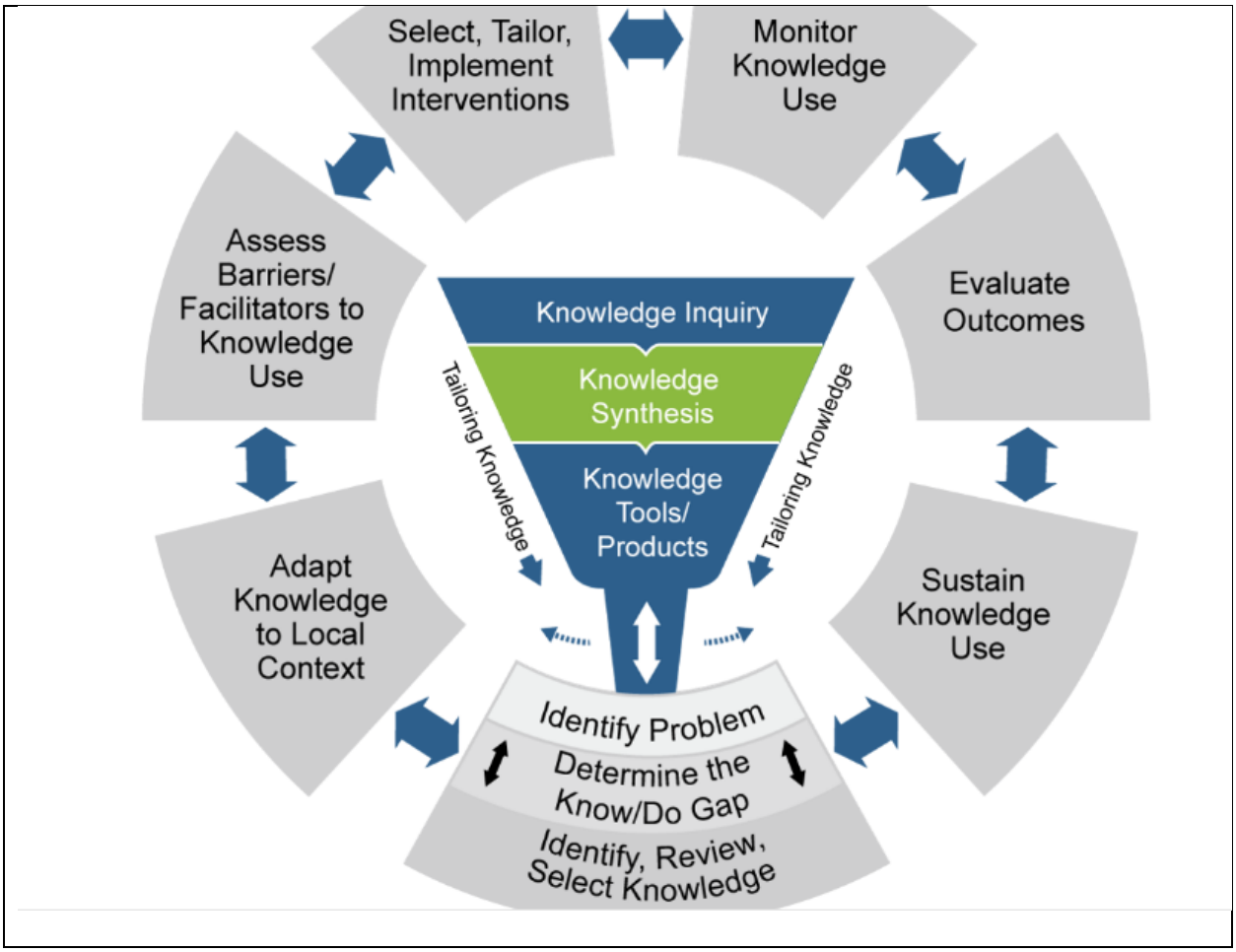
Appendix A

The Knowledge-to-Action Framework


Select, Tailor, Implement Interventions
Monitor Knowledge Use
Assess Barriers/ Facilitators to Knowledge Use
Evaluate Outcomes
Knowledge Inquiry
Knowledge Synthesis
Knowledge Tools/ Products
Tailoring Knowledge
Tailoring Knowledge
Adapt Knowledge to Local Context
Sustain Knowledge Use
Identify Problem
Determine the Know/Do Gap
Identify, Review, Select Knowledge

Appendix B

Telephone Follow-up Form

" Hi, My name is _____ and I'm calling from Coast Plaza Medical Center Case Management Department. This is a follow up call post discharge to see how you are doing and if there's anything we can do for you. Thank you,"

The first question is….

1. **How is your (body part/illness) feeling?**
2. **Have you stop any medication?**
3. **What medication are you taking?**
4. **What is your weight?**
5. **Has there been any weight gain?**
6. **How many pillows do you use to sleep at night?**
7. **Functional capacity?**
8. **How far can you walk, and at what point are you short of breath?**
9. **Do you have abdomen distention or swelling?**
10. **Any Edema in the ankles?**
11. **Vital Signs**
12. **Too dry – any flank pain, dry lips, decrease urine output?**
13. **What are you having difficulty doing in your home/work?**

" Thank you for taking my call. You will receive another call either later this week or next week from myself or another team member. Please reach out to Case Management if anything changes before the second call. Continue to document your vital signs and weight, and any other questions you may have regarding your health."

Appendix C

CPH HOSPITAL MANAGEMENT, LLC 13100 STUDEBAKER ROAD (562) 868-3751 Ext. 2273

PATIENT	VISIT ID	ADMIT DATE/TIME	DOB	AGE	SEX	PATIENT TYPE	SERVICE	ROOM
	MED REC NUMBER	FINANCIAL CLASS	PREFERRED LANGUAGE		MARITAL STATUS	RACE	ETHNICITY	ADMIT BY
	PAITENT NAME AND ADDRESS	SOC-SEC-NO	EMPLOYER	PATIENT EMPLOYER			TELEPHONE NO.	
CONTACT[3]	EMERGENCY CONTACT			NEXT OF KIN/RELATION			ALLERGIES	
##	COMPLAINT	PREVIOUS VISIT		MODE OF ARRIVAL		OUTPATIENT LOCATION		RELIGION
	ADMIT DIAGNOSIS	ADV DIRECTIVES		DISCHARGE DATE		DISCHARGE STATUS		DATE PRINTED
	COMMENTS							
GUARANTOR	GUARANTOR NAME AND ADDRESS	SOC-SEC-NO	GUARANTOR EMPLOYER	GUARANTOR EMPLOYER			TELEPHONE NO.	
INSURANCE	INS CO NAME ADDRESS1 ADDRESS2 CSZ POL HOLDER INS SEX REL TO PAT CERT# GROUP # GROUP NM AUTH #	INSURANCE 1		INSURANCE 2			INSURANCE 3	
	ADMITTING DOCTOR	ATTENDING DOCTOR		SURGEON		PRIMARY CARE PHYSICAN		ACCIDENT CODE
	ADMIT TYPE/SOURCE EMERGENCY/							
	CPH HOSPITAL MANAGEMENT, LLC 13100 STUDEBAKER ROAD NORWALK, CA 906502531 (562) 868-3751 Ext. 2273			#				

Appendix D

Please check the response below that best reflects your professional practice related to discharge planning:

		Never	Sometimes	Frequently	Usually	Always
		< 30%	30-40%	50-60%	70-80%	90-100%
1	How often do you discharge a patient home?					
2	How often do you plan for the follow-up results of lab tests or studies that are pending for a patient prior to discharge?					
3	Prior to discharge, how often, do you discuss the patient's medication and usage at the bedside with the patient?					
4	How often do you educate the patients on special diets based on their diagnosis?					
5	At discharge how often, do you reconcile the discharge plan with the organization policy?					
6	How often do you teach a written discharge plan the patient can understand?					
7	At discharge how often, do you educate the patient about his/her diagnosis?					
8	How often do you assess the degree of the patient's understanding of their discharge plan?					
9	How often do you review with the patient what to do if a problem arises after discharge?					
10	Prior to discharge how often, do you communicate with the discharge planner to assure all dual medical equipment, supplies, and any follow-up has been communicated to					

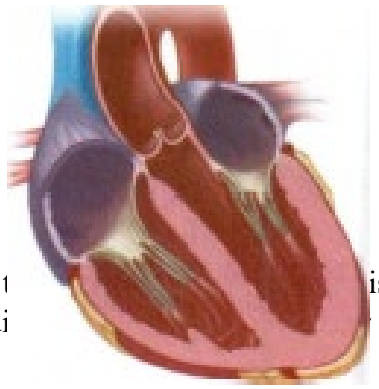
	the patient.					

APPENDIX E

CARE INSTRUCTIONS

Your Care Instructions

Limiting Sodium and Fluids with Heart Failure: Care Instructions



Sodium causes your body t is may cause your heart failure symptoms to get worse. Limiting sodi and lower your risk of having to go to the hospital.

People get most of their sodium from processed foods. Fast food and restaurant meals also tend to be very high in sodium. Your doctor may suggest that you limit sodium to 2,000 milligrams (mg) a day or less. That is less than 1 teaspoon of salt a day, including all the salt you eat in cooked or packaged foods.

Usually, you must limit the amount of liquids you drink only if your heart failure is severe. Limiting sodium alone often is enough to help your body get rid of extra fluids. However, your doctor may tell you to limit your fluid intake to a set amount each day.

Follow-up care is a key part of your treatment and safety. Be sure to make and go to all appointments and call your doctor if you are having problems. It's also a good idea to know your test results and keep a list of the medicines you take.

How can you care for yourself at home?

Read food labels

• Read food labels on cans and food packages. The labels tell you how much sodium is in each serving. Make sure that you look at the serving size. If you eat more than the serving size, you have eaten more sodium than is listed for one serving.

• Food labels also tell you the Percent Daily Value. If the Percent Daily Value says 50%, it means that you will get at least 50% of all the sodium you need for the entire day in one serving. Choose products with low Percent Daily Values for sodium.

• Be aware that sodium can come in forms other than salt, including monosodium glutamate

(MSG), sodium citrate, and sodium bicarbonate (baking soda). MSG is often added to Asian food. You can sometimes ask for food without MSG or salt.

Buy low-sodium foods

• Buy foods that are labeled "unsalted" (no salt added), "sodium-free" (less than 5 mg of sodium per serving), or "low-sodium" (less than 140 mg of sodium per serving). A food labeled "light sodium" has less than half of the full-sodium version of that food. Foods labeled "reduced sodium" may still have too much sodium.

• Buy fresh vegetables or plain, frozen vegetables. Buy low-sodium versions of canned vegetables, soups, and other canned goods.

Prepare low-sodium meals

• Use less salt each day when cooking. Reducing salt in this way will help you adjust to the taste. Do not add salt after cooking. Take the saltshaker off the table.

• Flavor your food with garlic, lemon juice, onion, vinegar, herbs, and spices instead of salt. Do not use soy sauce, steak sauce, onion salt, garlic salt, mustard, or ketchup on your food.

• Make your own salad dressings, sauces, and ketchup without adding salt.

• Use less salt (or none) when recipes call for it. You can often use half the salt a recipe calls for without losing flavor. Other dishes like rice, pasta, and grains do not need added salt.

• Rinse canned vegetables. This removes some-but not all-of the salt.

• Avoid water that has a naturally high sodium content or that has been treated with water softeners, which add sodium. Call your local water company to find out the sodium content of your water supply. If you buy bottled water, read the label, and choose a sodium-free brand.

Limiting Sodium and Fluids with Heart Failure: Care Instructions (Page 3 of 4)

Avoid high-sodium foods, such as:

• Smoked, cured, salted, and canned meat, fish, and poultry.

• Ham, bacon, hot dogs, and luncheon meats.

• Regular, hard, and processed cheese and regular peanut butter.

• Crackers with salted tops.

• Frozen prepared meals.

• Canned and dried soups, broths, and bouillon, unless labeled sodium-free or low-sodium.

• Canned vegetables, unless labeled sodium-free or low-sodium.

• Salted snack foods such as chips and pretzels.

• French fries, pizza, tacos, and other fast foods.

• Pickles, olives, ketchup, and other condiments, especially soy sauce, unless labeled sodium-free or low-sodium.

If you cannot cook for yourself

• Have family members or friends help you or have someone cook low-sodium meals.

• Check with your local senior nutrition program to find out where meals are served and whether they offer a low-sodium option. You can often find these programs through your local health department or hospital.

• Have meals delivered to your home. Most cities have a Meals on Wheels program. These programs provide one hot meal a day for older adults, delivered to their homes. Ask whether these meals are low sodium. Let them know that you are on a low-sodium diet.

Limiting fluid intake

• Find a method that works for you. You might simply write down how much you drink every time you do. Some people keep a container filled with the amount of fluid allowed for that day. If they drink from a source other than the container, then they pour out that amount.

• Measure your regular drinking glasses to find out how much fluid each one holds. Once you know this, you will not have to measure every time.

• Besides water, milk, juices, and other drinks, some foods have a lot of fluid. Count any foods that will melt (such as ice cream or gelatin dessert) or liquid foods (such as soup) as part of your fluid intake for the day.

Where can you learn more? Call us at: 562-868-3751

Appendix F

TRACK AND TREND
RE- ADMISSION

NAME	DOB	VISIT NUMBER	DATE OF ADMISSION	DATE OF PREVIOUS DISCHARGE	DIAGNOSIS
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					

Appendix F

Appendix G


LIVING WITH heart failure
good habits for a healthier lifestyle
Weigh yourself every day
Take your medications as prescribed
Eat less salt
Be active every day
If you smoke, quit!
Know when to call your doctor or healthcare professional

Weigh yourself every day

Sudden or steady weight gain can be a warning sign that your body is holding on to fluid.

- Get up in the morning and go to the bathroom.
- Step on the scale wearing the same amount of clothing each day.
- Write down your weight.
- Compare today's weight with yesterday's weight. If gain is more than 2–3 pounds in a day, or 5 pounds or more in a week, talk with your healthcare professional or follow self-care instructions.

Eat less salt

People with heart failure usually need to eat less salt. Salt is made up mostly of sodium. Sodium acts like a sponge to hold extra fluid in the body, making it harder for the heart to pump.

- Limit sodium to no more than 2,400 mg per day unless told otherwise.
- Use herbs, spices, pepper, and lemon juice instead of salt.
- Use fresh foods (whole-grain breads, cereals, fresh vegetables, and fruit) in place of processed, canned, smoked, or cured foods.

Take your medications as prescribed

Medications for heart failure reduce the work your heart has to do, strengthen the heartbeat, and remove extra water from your body.

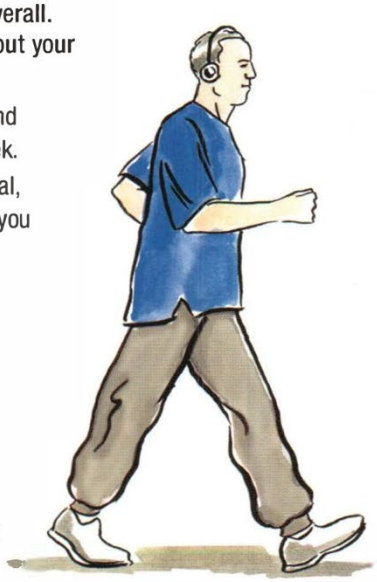
- Take your medications on a regular schedule.
- Try using a pill box to help you organize your daily doses.
- Use an alarm clock or watch as a reminder to take your medications on time.

- Refill your prescription when you are down to a one-week supply. Do not let your prescriptions run out.
- Do not stop medication, change the dose, or take another medication unless instructed to do so by your healthcare professional.
- If you miss a dose, and it is close to your next dose, skip the missed dose. Do not double your next dose. If you have any questions, talk to your healthcare professional.
- Learn the generic and brand names, doses, side effects, and the reasons for taking your medications.

Be active every day

Moderate physical activity helps you tire less quickly and makes you feel better overall. Ask your healthcare professional about your physical activity prescription.

- Choose low-level aerobic exercise and work up to 30 minutes 5 days a week.
- Don't exercise right away after a meal, when it's too hot or humid, or when you don't feel well.



Good Exercise Choices

- Walking
- Biking
- Swimming
- Hiking
- Low-impact aerobic routines

Stop exercising if you:

- Become short of breath
- Feel dizzy or sick to your stomach
- Break into a cold sweat
- Have chest pain

If these symptoms persist, call your healthcare professional.

If you smoke, quit

Call **1-562-868-3751** to make an appointment to speak with a wellness coach who can provide you with strategies and resources to help you quit tobacco.

When to call for help

Call your healthcare professional for new or increasing symptoms such as:

- Shortness of breath or inability to breathe lying down
- Sudden weight gain: 2–3 pounds in a day, or 5 pounds or more in a week
- Swelling of feet, legs, ankles, or abdomen
- Cough that does not go away
- Side effects from medications that are different or occur more often than what you usually experience
- Irregularities in heart rate

***Call 911** right away if you are experiencing:*

- Severe shortness of breath
- Chest discomfort, pain, or pressure not relieved by rest or nitroglycerin
- Profuse sweating and pale color
- Coughing up pink, frothy sputum