

Evidence-Based Practice Project Proposal

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## Abstract

### **Preventing Heart Failure Exacerbation in Homecare Patients**

#### Background

Early readmission of heart failure (HF) patients to inpatient facilities is a major issue in the healthcare arena. These readmission rates contribute to the rising cost of healthcare and make up the majority of Medicare expenditures (Proctor, Morrow-Howell, Li, & Dore, 2000). Even though this poses great issues in healthcare, only a limited amount of studies have been completed on the effectiveness of routine home care and/or the usage of the Advance Practice Nurse (APN) in promoting self-care and the prevention of re-hospitalization of HF patients. Therefore, the significance of this study is to identify the best evidence-based practice intervention for homecare patients and improve their quality of life, with the usage of the advanced knowledge of an APN.

#### Methods

The study targeted ten elderly home care patients' ages 55-75 years of age, with a diagnosis of heart failure, for a six-week period. The participants were educated on HF disease process, diet management, and disease control. The participants were assessed pre and post intervention on self-care skills and disease control by using Self-Efficacy Questionnaire (SE) and Minnesota Living with Heart Failure Questionnaire (MLQ). Data from these score were entered into SPSS for analysis.

#### Results

Out of 15 eligible participants invited to participate, 4 (26.67%) consented to participate (1 males; 3 females) in this project. The average mean pre-intervention MLQ score were 63.25 (SD 6.23) and average mean pre-intervention SE score were 36.75 (SD 10.275). All participants MLQ scores and SE scores improved, showing that the participants gained self-care skills and disease control.

#### Conclusion

The usage of an APN in homecare HF patients has the potential to improve patients' knowledge of disease process, which inertly improves self-care skills and disease control, preventing frequent readmissions.

## Evidence-Based Practice Project Proposal

### **Introduction**

#### **Background and significance of the problem**

Congestive heart failure (CHF) is a condition that develops gradually over time, and is a serious issue in persons 65 years of age and older. Damage to the heart has occurred by the time the victim is aware of the culprit. Even in milder forms of CHF, the condition is dangerous and difficult to manage. CHF is an ever-changing condition especially in patients, who do not understand its detrimental effects. It brings an array of symptoms and conditions such as peripheral edema, shortness of breath, fatigue, difficulty sleeping, enlargement of the heart, and pulmonary edema (Mayo Clinic, 2011). Patients suffering with heart failure face frequent hospitalization due to poor disease management. Elderly patients are at greater risk for exacerbation due to the aging process, decreased understanding regarding the disease process and ineffective management skills. Patients with congestive heart failure require frequent monitoring and education on diet, exercise, medication, etc. In order to battle the every changing condition a multidisciplinary approach is needed. Coon and Ferra (2007) recommend a multidisciplinary disease management (DM) program for those at high risk for frequent hospitalizations and/or decline in health status. It is important that the team work as a unit in treating the symptoms and other conditions that can transpire. Fonoro (2011), reported that the usage of a multidisciplinary disease management (DM) program in a “single-center study of high-risk HF patients, revealed a reduction of HF readmissions within 90 days by 56%, all readmissions by 29%, and overall cost of care by \$460 per patient”.

The most common use of the multidisciplinary team approach in managing congestive heart failure patients occurs within homecare agencies. Homecare agencies are key components

in treating individuals with congestive heart failure, because there is increasing number of elderly individuals being diagnosed with CHF living within the community with decrease functional level. In addition, caregivers of these individuals are at increased risk for caregiver role strain (Quaglietti, Atwood, Ackerman, & Froelicher, 2000). The multidisciplinary approach assist these individual and their family in regain confidence in self-managing their condition.

Homecare for the purpose of this project consists of patients receiving care in their home whether by a home health care agency, Medicare guided home based programs, and/or hospital based programs (also known as hospital-at-home or home transition programs). Homecare is a skilled service that follows Medicare and Medicaid guidelines for providing care. In present times, homecare services can act as an alternative for hospital stays. Medicare, Medicaid, and private insurance pay for most homecare services for those with a skilled need and physician's order. Services rendered are by qualified clinicians such as a nurse, therapist, home care aides, medical social service, etc. The multidisciplinary team works under the direction of the patient's private physician(s), unless the patient care provided is by a hospital-at-home team. The visits provided by homecare agencies are on an intermittent basis; therefore, a willing caregiver must be present to provide care when the staff is not in the home. The clinician teaches the caregiver and patient how to manage disease processes and when to contact the staff or other emergency personnel. Typically, homecare nurses visit patients on a weekly basis, but nurses visit frequency ultimately depends on the extent of care an individual requires. The home care staff depends on the caregivers to report changes in the patient's health conditions, and not to return the patients to the hospital at the first sign of a decline (Madigan, 2008). The main goal of homecare agencies in patients with CHF is to prevent exacerbation, re-hospitalization, and increase quality of life. In addition, to decrease healthcare cost that occurs with readmission.

Congestive heart failure management can be difficult partly due to noncompliance, which relates to lack of education of disease management and/or slow transitioning through the stages of change. Nonconformity to lifestyle and medication recommendation is widely seen in CHF patients, and there is limited evidence-based intervention in the horizon to aid in improving compliance in these patients (Van der Wal, Jaarsma, & Van Veldhuisen, 2005). Patients must play an active part of their plan of care in order to prevent exacerbation and improve quality of life.

### **PICO question**

My chosen PICO question is as follows: In elderly homecare patients with congestive heart failure will the addition of an Advance Practice Nurse (APN) monitoring (telephonic and/or visit) educations versus routine homecare alone help promote greater self-care and prevent exacerbation within six months post discharge from an inpatient facility? .

### **Purpose and goals of project**

The primary goals for this project are to identify the best evidence based intervention that will prevent congestive heart failure exacerbations in home care patients and promote self-care/management within a six-month period. Distinguishing the best evidence based intervention will assist in taking out the guesswork of possible effective interventions in treating heart failure in homecare patients. In addition, it will assist Practitioners in providing proficient individualized patient care and increasing quality of life.

### **Target population**

The target population for this project is elderly homecare patients with a diagnosis of congestive heart failure. Congestive heart failure can affect the elderly in grave ways, due to the aging process, lack of knowledge of the disease process and poor self-management skills. Eighty

percent of re-hospitalization occurs in those over the age of sixty-five. In addition, the treatment of congestive heart failure is responsible for increasing healthcare cost more so than any other disease (Leibundgut, Pfisterer, & Brunner-La Rocca, 2007).

Self-management is a vital component in managing chronic disease such as CHF. Self-management is a key component in aiding CHF patients' in living conventional lives. Hence, the desired project outcome is for patients to be able to manage their condition themselves, and prevent exacerbations for six-months. Their self-management skills should include being able to identify factors, which are associated with exacerbations, weight control, and knowledge of when to seek medical attention.

### **Framework**

The evidence-based framework that will guide this project includes the Iowa Model, the Transtheoretical Model of Change, and transformative learning theory. The Iowa model is compatible to this project because it raises questions regarding the gaps in healthcare information, which can lead to poor quality of care and outcome in the delivery system. A gap is present in facilitating successful control of CHF exacerbation in the elderly. This issue is causing concerns in the quality of life in patients living with CHF and healthcare cost. The Iowa model also focuses on holistic care of the patient. The model includes a multidisciplinary approach; it considers the "entire healthcare system from the provider, to the patient, to the infrastructure" (Dontje, 2007). The team does an analytic review of evidence-based information regarding the issue. After collecting all needed information, the team puts their plan into action. The team uses a pilot program to test their theory in a "controlled environment" (Melnyk and Fine-Overholt, 2011). After the pilot program is completed, the team decides if the effects are great enough to

implement in daily practice. If effects are great enough to deem a change, the team will evaluate the change that transpires.

The Transtheoretical Model of Change developed by Prochaska & DiClemente (2000) will also help guide this project. The use of this model is associated with various behavior problems such as obesity, non-compliance, drug abuse, etc. In order for an individual to thrive with any health issue or condition, a change must take place. The patient must adapt to their surroundings in order to be successful in life with illness. Prochaska & DiClemente's Transtheoretical Model of Change (2000) describes the five stage of change that one goes through. The stages are precontemplation, contemplation, preparation, action, and maintenance. An individual may sway between the stages, until a complete change emerges, and even then, there is a possibility for him/her to revert to a previous stage. After an individual changes his/her thought process change emerges. Patients with congestive heart failure must realize that their current lifestyle habits must change, in order to gain control over their disease process. It is the clinician's responsibility to provide the patient with the needed information to consider change. At times, reiteration of information must occur before a change occurs.

The Transformative Learning Theory will also aide in guiding this project. Jack Mezirow (Cooper, n.d.) first developed the Transformative Theory and others such as Robert Boyd and Paulo Freire (Cooper, n.d.) expanded the theory. The Transformative Learning Theory assists individuals in reasoning for themselves. The theory encompasses the use of personal experiences, critical reflection, and discourse to encourage learning. How an individuals' learn is subjective in nature and can occur at different periods in their life. The Transformative Theory suggests that learning in an individual arises more often when confronted by an unpleasant or emotional experience, which causes them to view their situation differently. It is important for

individuals to understand the cause and effect of their actions, and be able to transform it into a learning experience. Once an individual critically reflects on their situation, learning transpires. When a patient with congestive heart failure reaches this point, they are able to realize that their actions and behaviors play a crucial role in their health, leading to change.

The use of these three theories assists in guiding patients towards self-management of their disease state. In addition, the theories will help the clinician provide holistic care for their patients. Ultimately, helping clinician distinguish which method is effective in bringing about a change in patients with CHF. With the primary goals of self-management, decreasing exacerbation and emergency/hospital visits.

### **Synthesis of research findings**

CINAHL, AHRQ, Cochrane, ProQuest Nursing, and PubMed were the databases of choice for this project. A close review of several types of articles with various designs and sampling facilitated development of this evidence based project. CINAHL held the most extensive information regarding the management of congestive heart failure by homecare agencies.

There are a limited numbers of studies conducted to identify the effectiveness of homecare in the management of patients with congestive heart failure. The research literature reviewed in regards to routine home care agency in the management (APN and/or routine homecare) of CHF were peer reviews, systematic reviews, quantitative, and qualitative studies. The studies reviewed identified their participants in various ways, but most participants were recently discharged from the hospital or other inpatient facilities within the past 14 days and admitted to homecare. The other requiring criterions for the participants were that they have a diagnosis of CHF and over the age of 65. The participants in the studies received a visit from a



homecare staff member within 24 to 72 hours post discharge from an inpatient stay. This is a crucial period for patients with congestive heart failure; this period is the transitional period.

The first article reviewed concerning the management of CHF in routine homecare, is a level I systematic review by Hong, Marrow-Howell, & Proctor (2004). The authors reviewed a combination of approximately six quantitative and qualitative studies. The various studies reviewed by the authors surveyed homecare patients with CHF for at least six months to two years. The study focuses on the usage of formal (homecare agency) and informal (family, friends, meals on wheels, etc.) services in the management of patients with CHF. The main purpose of the article is to observe the effects that homecare services (formal and informal) have on the hospital readmission rates in patients with CHF. In addition, the article seeks to increase care providers and policymaker's knowledge, leading to programs and policies that are better able to meet the needs of the elderly with CHF. The studies reviewed found that 83% of the patients had multiple re-hospitalizations within a two-year period. Thirty-five percent of the patients required re-hospitalization within two to fourteen weeks post discharge from inpatient facility. The article suggests that 53% of the readmissions were preventable. The study used dependent (hospital readmission) and independent (informal service) variables to measure the outcomes.

A Level II random controlled trial (RCT) study, completed by Leff (2001), also set out to decrease re-hospitalization of patients with chronic illness such as congestive heart failure by using a hospital-at-home program. The participants chosen, presented to the emergency department or ambulatory clinics and were admitted to the hospital due to disease exacerbation. The hospital at home team transitioned the patient back into the home setting, by providing extensive education and follow-up visits. The hospital at home team included physicians,

pharmacist, and nurses. The qualitative-quantitative study revealed that patients that participated in the hospital at home study demonstrated a decrease in re-hospitalizations (“42 percent for Hospital at Home patients, compared with 87 percent of hospital inpatients”), a decrease length of stay when re-hospitalized (“3.2 vs. 4.9 days”), improved quality of life, and fewer complications (“6 vs. 11 percent”). Patient surveys were used to measure outcomes for the study (Leff, 2001).

In the level II RCT completed by Stewart, Pearson, and Horowitz (1998), participants received a single home visit from a nurse and pharmacist after being discharged from an inpatient facility. The staff members reviewed the patient’s medication in depth and monitored caregiver and patient compliance. In addition, the staff observed patients for possible changes in their health status during the visit. This study demonstrated that homecare visits decrease the total number of unplanned admissions, complications and deaths than those who received usual homecare. Patients that received standard homecare (non-medical personnel care) had a significant increase in unplanned readmissions.

A level V systematic review article by Madigan (2008) was the final article reviewed. The primary purpose of the study was to increase understanding about patients outcomes with heart failure. The author reviewed the database of homecare agencies and hospitals. The study monitored participant’s records for readmission to the hospital, their length of stay, and functional status. The primary record used to follow these components is the Outcomes and Assessment Information Set (OASIS). The OASIS provides information such as functional status, admission to inpatient facilities, deterioration, etc. at set points and times during a patient homecare sequence. The results of the study showed that 15% of patients with congestive heart failure were hospitalized due to disease exacerbation during their homecare experience and 64%

were able to stay in their home upon discharge from the homecare agency. The average length of home stay after discharge from an inpatient facility is 44 days. Outcome measures were completed by OASIS analysis.

Studies of the effectiveness of the APN in the management of CHF homecare patients are limited; therefore, for this project the Advance Practice Nurse will consist of Nurse Practitioner (NP) and/or Clinical Nurse Specialist (CNS). The APN role in the home care setting is to assist patient's transition to the home environment. APNs are generally a part of hospital based homecare programs; due to traditional homecare, agencies require patients to have their own primary care physicians. Generally, prior to discharge from the inpatient facility the APN devise a plan of care for the patients. After discharge, the APN follow-up with the client either by telephone or by visiting within 24 to 48 hours, to ensure and assist the patient in following the plan of care. As with routine homecare, the APN educates the patient on self-management techniques and diseases process. In addition, the APN can provide medication modification.

The study completed by Naylor et al. (2004) compared the usage of an APN versus traditional homecare agency in the management of CHF patients. The purpose of this level II RCT is also to evaluate the efficiency of the APN in transitioning the CHF patient to the home environment. The study divided the participants into two groups: controlled and intervention group. Participants in the controlled group had access to a routine homecare agency 7 days a week, with on-call service for after-hours issues. The intervention group received the expertise of an APN, upon admission to the hospital. After dismissal, the APN visited the patient at home for a 3-month period. The APN had set hours in which he/she was available to the participants. After the 3 month period was over the APN continued to follow patients via phone. Both groups received education regarding their disease process, medication, and lifestyle habits. The results

from the study showed that re-hospitalization and/or death rate was lower in the intervention group (47% versus 61.2%) at the 52-week period. The study used telephone interviews to measure the outcomes.

According to the level II RCT study, conducted by McCauley, Bixby, and Naylor (2006) the APN can be effective in educating patients with CHF about disease process and self-management. Self-management is an important skill that CHF patients must encompass to manage the dreadful disease. Increased quality of life and decreased re-hospitalization are the benefits of a patients being able to manage their disease process. In the study, the APN followed the designated patients for a 3-month period. During this time, the patients had access to the APN 24 hours a day. In order to assist patients in developing self-management skills, knowledge regarding available community services, and to enhance patient-provider dialogue the APN created patient specific plan of cares. The APN used multiple strategies to increase these skills, such as multidisciplinary team approach, prompts and cues regarding medication and nutrition management. The APN efforts results in promising outcomes in reducing re-hospitalization. Outcome evaluations were done through Kaplan-Meier survival curves and proportional hazards regression.

The level II RCT done by Stauffer, B., Fullerton, C., Fleming, N., Ogola, G., Herrin, J., Stafford, P., and Ballard, D. (2011) was also a hospital home based program led by an APN. The primary goals of this program were to decrease re-hospitalization of the CHF patient and cost spent to care for these patients when re-hospitalized. The study followed the participants for 60 days post inpatient discharge. The study revealed that management of the CHF patients by an APN reduces readmission rate by 48% versus standard homecare management. In addition, the

findings showed that the hospital-based program decreased cost by \$227 per heart failure Medicare patient.

As one can see, it is difficult to devise which intervention is most effective due to both having promising outcomes. There is need for more studies comparing the two interventions in order to have all-inclusive results; from the research that has been completed it appears that the APN lead groups have fewer re-hospitalizations.

### **Appraisal of the evidence:**

The literature reviewed, was composed of similar studies. The majority of the studies were level II RCT studies conducted by Leff, (2001); Stewart et al., (1998); Naylor et al., (2004); McCauley et al., (2006); and Stauffer et al. (2011). The final study was a level I systematic review by Madigan (2008). The literature review vaguely answers the question regarding which intervention has the greatest effect on preventing re-hospitalization in CHF patients. Each of the articles provides a clear concise reason for the completion of the study. All of the studies done were to determine the effectiveness of routine homecare and/or the usage of the APN in the homecare setting in preventing re-hospitalization of CHF patients. The literature review results are reveal evidence for this project; it appears that an APN guided program is best method when compared to routine home care in managing CHF patient when in the home setting. Re-hospitalization in the CHF patient is inevitable. In the studies reviewed the CHF patient typical return to hospital due to an exacerbation within 14 days post discharge with routine homecare methods and 44 days with APN intervention

Well-known and knowledgeable professional in their field of study completed the studies reviewed. In some instances, the studies required the APN to received education regarding the care of elderly patients with CHF prior to being able to participate in the study (McCauley et al.,

2006). Other participants of the studies were qualified cardiologists, pharmacists, etc. The studies did not identify whether the nurses in the home health care group had previous cardiac experience prior to the studies. The studies used are level II RCT, and selected their participants randomly from hospitals or homecare database (Naylor et al., 2004, McCauley, Bixby et al.; Madigan, 2008; Leff, 2001). The participants were not discriminated on regarding living condition, race, gender, ethnicity, etc. The participants in each group had similar backgrounds; they were elderly and recently discharge from the hospital. Bias did occur in Naylor et al. (2004) RCT due to the intervention group was revealed to the researchers. Studies completed by Hong et al., (2004) and Naylor et al., (2004) included the total number of participants followed; the other articles did not include this information, leaving them unrealistic to implement into practice. The main strengths of the studies were that they were RCT studies so that the participants were randomly assigned to groups. The weaknesses of the studies are that they were conducted in non-controlled environments, leaving the participants' behavior to sway the results of the experiment as well as using self-report data and convenience samples. Outcome measurement transpired through patient's response (Leff, 2001; Naylor et al., 2004), and OASIS analysis (Madigan, 2008).

Based on the studies reviewed the graduate student must provide participants with clear, concise, and simple education regarding CHF disease process and management. The individuals that will be participants in this small test of change are elderly and are subject to have decrease understanding, poor reading skills, and declining eyesight. Therefore, they will need verbal and/or clearly written material to aid in the learning process. In the studies completed by Naylor et al.(2004), Stauffer et al. (2011), and McCauley, Bixby, and Naylor (2006) the APN transitioned the participant back into their home environment by providing individualized

education promoting understanding and decreasing readmission and exacerbation. The level of evidence of the overall material is fair, the material deserves an A, the studies did indeed increase the researcher knowledge regarding the usage of homecare in the CHF patient, it appears that the APN intervention were more effective than routine home care methods (see Appendix A for complete evaluation).

### **Needs Assessment**

Approximately fifteen to twenty percent of Gentiva's patient population consists of congestive heart failure patients. Five percent of these individual returns to the hospital within the first 30 days post discharged from an inpatient stay. Recently, the agency collaborated with a local hospital that begun a care transition program to prevent readmission of CHF patients, but re-hospitalization prevention is still difficult. Upon admission of these patients to the agency, they receive a scale, CHF zoning tool, and an action plan pamphlet. They also receive the agency's standard weight and blood pressure log booklet, pillbox, and reportable symptom pamphlet. The nurse visits the individual at an increased frequency and provides education regarding disease process, self-management, and symptom recognition. Therefore, the agency CHF population falls into one of two categories: the care transition population or the traditional/routine care congestive heart failure population. This is where the gap and need presents within the organization. The individuals that are not considered care transition patients are possibly not receiving the same information as the care transition individuals, unless the case manager take the initiative to provide these patients with the visual aids, self-management tools, and/or other information. Non-care transitional patients return to the hospital at a higher rate than the care transition patients do. Therefore, this project will focus on the routine care CHF patients,

to ensure that they are receiving adequate information regarding their disease process and self-management skills; therefore decreasing Gentiva's five percent readmission rate.

The primary stakeholders for this project include the agency administrator and regional directors. These individuals review and manage down-sloping disease trends within the agency. In addition, they have the ability to bring forth changes within the agency, when needed. The secondary stakeholders are managers of clinical practice (MCP), and the performance improvement (PI) department. They also assess changing disease trends, in addition to enforcing changes. Since congestive heart failure is one of the most prevalent disease processes in the agency, the reaction from these individuals has been positive. They too are interested in decreasing readmission and improving patients' quality of life.

After carefully reviewing the organization needs, the proposed intervention for the target population is education. By providing the routine homecare CHF patients with enhanced education it can assist in promoting self-care, and ultimately decreasing readmission. Currently within the agency, the routine homecare population is not receiving additional assistance such as visual aids, scales, CHF zoning tool, reportable symptom and an action plan pamphlet, unless the case manager takes initiative and provides patient education on these items.

### **Implementation**

The implementation process will begin with identifying ten to fifteen non-care transitional congestive heart failure patients, which are in the age range of 55-75 years of age. Newly admitted individuals to the home care agency within past 14 days are preferred, but if this is not feasible, they can be within their second recertification period or have had complications related to their CHF during their home care period. The graduate student will educate case managers regarding ways to enhance the education they provide to patients and visual aid tools



that can assist in reminding patients of self-management skills and warning signs and symptoms (see Appendix B for educational tools). The graduate student will contact the patient via telephone, regarding the small test of change within twenty-four to 48 hours of admission to the agency. Once the patient gives the graduate student permission to visit their home, the patient will be provided with more detailed information regarding the study. If the patient decides to participate, consent to participate will be used to establish participant's willingness to be a part of the project on a volunteer basis. The graduate student will explain the consent in its entirety (see Appendix C for consent and recruitment script). Also, at this time any questions the participant may have will be addressed. The graduate student will make a total of four to five visits to the patient home to provide supplemental information. In between the visit, the graduate student will make phone calls to check the patient's health status.

During the initial visit, the patient will be asked to complete a self-efficacy and a Minnesota Living with Heart Failure (MLQ) questionnaire (see Appendix D for self-efficacy and MLQ). Also during this visit, the graduate student will ensure that patient is on the proper regimen of medication for congestive heart failure per the National Guideline Clearinghouse. The graduate student will also ensure that all of the participant medications are in the home per discharge medication profile. If medications are absent, the graduate student will contact participant's Primary Care Physician (PCP) and/or agency for medication clarification. Also, during this visit the graduate student will assess the patient need for a scale and a blood pressure monitor. If the participant is unable to purchase a scale or blood pressure monitor, he/she will be provided with a scale and/or monitor. The patient will be taught how and when to weigh and check his/her blood pressure. The patient will be requested to keep a daily log of weight and blood pressure. Each home visit will consist of the teaching of one heart or blood pressure

related medication (including usage, side effects, etc.) and congestive heart failure management information by using visual aids, such as, CHF zone tool, blood pressure visual aid, symptom management log, and CHF discharge orders. By the second visit, the graduate student will provide the participant and/or caregiver a list of all blood pressure/heart medication and possible side effects to keep in the home. The patient will have access to a Registered Nurse (RN) 24 hour/day-7 days a week through the Gentiva Agency. The patient will be encouraged to contact their home care agency at the first sign of CHF exacerbation and not to wait until symptoms are out of control. The data that will be collected during the visit will be overall health status information per Gentiva's paper nursing note, blood pressure, and daily weight. A recapture of the previous nurse's visit and/or graduate student's visit will also be done by simple question and answer, to monitor patient's understanding of teaching being provided. This information will also be documented on the nursing note. At the end of project, the patient will be asked to complete another self-efficacy and Minnesota Living with Heart Failure questionnaire.

Patients and staff members' attitudes can greatly influence the success of the project. If these individuals possess a positive attitude it can foster high moral and increase communication among all that is involved in the project. More importantly, it leads to a successful outcome for the patient. If the nurses possess a negative attitude towards the project, they will be less motivated to report changes in the patients' status to the graduate student. If the patients possess a negative attitude they will not be willing to adhere to the education provided to them and/or report symptom changes to the nurse in a timely manner, which can ultimately affect their outcome. Therefore, attitudes are the major factor in determining how well the project will progress. Another factor that can act as a barrier for this project is not having enough patients willing to participate in the project. Elderly individuals may be timid, embarrassed, or have an

issue with an additional person entering their home. Also, they may not gain a clear understanding of what the project entails and refuse to participate.

The resources that will be required for this project are ink, paper, scales, electronic blood pressure monitors, and gasoline for transportation to patients' homes. The estimated cost for these items is approximately three to five hundred dollars. The field staff (nurses, therapist, and home health aides) and interoffice staff time will also be required. These individuals play a key role in providing reports regarding patients' status. (see Appendix E for timeline and budget)

### **Evaluation**

The aim of this project is to distinguish the best evidence-based practice in promoting self-care and preventing readmission of congestive heart failure patients in home care. The Outcome and Assessment Information Set-C (OASIS-C) data set, patients' behaviors, self-efficacy for managing chronic disease and Minnesota Living with Heart Failure questionnaire are the specific tools that will be used to monitor and evaluate outcome. The OASIS-C will be the major tool used to evaluate outcomes, due to its ability to track patient's care and overall health including functional levels, at different time points throughout their homecare service. It also indirectly monitors patient behavior changes such as ability to take medication as prescribe, symptom management, etc. Unfortunately, due to time constraints the self-efficacy and MLQ questionnaires will be the only evaluation tool used in the pilot. The self-efficacy questionnaire will be used to determine participants' confidence level in taking care of themselves; and the MLQ will determine the patients' ability to manage their symptoms. These questionnaires have been proven to be successful in monitoring outcome in those with chronic diseases (Freund, Gensichen, Goetz, Szecsenyi, & Mahler, 2011; Rector and Cohn, 1992). Both questionnaire

scores will be compared pre and post to gain insight on participants, confidence in their self-management skills and symptom control.

## Discussion

This project began with the APN student seeking the approval of the Auburn University (AU) Institutional Review Board (IRB) and Gentiva's Health Service Chief Executive Officer (CEO). The anticipated start date for the project was set for January 23, 2012, but seeking the approval for IRB and Gentiva's CEO created a 12-week delay. Once approval was granted, Gentiva's Administrator contacted fifteen heart failure patients via telephone to extend the offer to participate in the project. Due to the limited amount of individuals within Gentiva's system that met current enrollment criteria, current criteria were altered to increase enrollment rates. The participants had to be over the age of 55 with a diagnosis of heart failure, a current patient of Gentiva Health Service, recent/frequent issue with heart failure such as edema, chest pain, shortness of breath, frequent hospitalization, and/or emergency visit. Out of fifteen participants approached, only four (n=4) agreed to participate. The mean age of the participants was 81.75 (SD 16.049) years. Fifty percent of participants were Caucasian and the remaining fifty percent were African American. All participants had a diagnosis of heart failure and other major comorbidities such as hypertension, diabetes mellitus, coronary artery disease, etc.

Once the participants agreed to participate in the project Gentiva's case managers obtained informed consent permitting APN student to enter patient's homes. The initial visit was made 24-48 hours after signing of the consent, during this visit baseline information was taken. Also, during the initial visit participants' need for a scale and electronic blood pressure cuff was assessed (all participants had their own personal scale and blood pressure cuff) and the participant completed the Minnesota Living with Heart Failure Questionnaire (MLQ) and the Self-Efficacy Questionnaire (SE) to determine their pre-intervention acuity regarding their disease process. Visits frequency for the participants was based on their current knowledge level; participants received four to six over a six-week period. All participants had been

sensitized to information the APN planned to impart prior to visits. Their awareness was raised through frequent readmission to inpatient facility and/or emergency room visit. Fifty percent of the participants were making an effort to following a HF regimen; therefore, they used this project as a refresher course. Weekly visits were guided by the participant's knowledge deficit, which included how to following low sodium diet effectively, strict medication regimen, safe exercise regimen, and monitoring weight and blood pressure daily. All participants were willing to take the necessary steps to improve their health condition and prevent rehospitalization. They found learning how to understand food labels the most needed and excited skill to possess in controlling their symptoms. One participant began a food diary to monitor sodium intake and requested an extra visit to ensure he was on the right track in healthcare. Post-intervention assessment was done using the MLQ and SE questionnaire to assess if participants gained increase insight on managing their disease process.

### **Results**

- The mean pre-intervention MLQ score were 63.25 (SD 6.23) suggesting that participants' disease process had a moderated effect on their activities of daily living, mental health, finances, and/or energy level, etc.
- The mean pre-intervention SE score were 36.75 (SD 10.275), revealing that the participants were moderately confident in managing their disease process.
- The mean post-intervention MLQ score were 54.25 (SD 5.56) signifying a decrease in effects that heart failure has on participants lifestyle.
- The mean post-intervention SE were 40.25 (SD 10.24) representing an increase in participants self-efficacy skills. The alterations in both scores demonstrate an increase in overall participants' knowledge base regarding heart failure management.

- There was a significant decrease in MLQ score pre to post ( $t=2.12$ ,  $p=.062$ ).
- There was a significant increase in SE score pre to post ( $t=-1.85$ ,  $p=.081$ ).
- Since the p values are statistically significant, the null is rejected.

### **Recommendations for Future Research**

Despite the impact that heart failure has on elderly individuals and Medicare expenditure, limited research has been conducted to assess these impacts in homecare patients. Further research is needed to discover the most effective methodology for decreasing rehospitalization in HF patients, especially those under the care of homecare agencies. Future research should focus on homecare patient specific needs and concerns whether it is education, caregiver and/or financial concerns. Once an individual is stable holistically, he or she is more receptive to taking control of their health and living a healthier lifestyle.

### **Recommendations for Practice Change**

Due to heart failure being one of the leading causes of rehospitalization in those 65 years of age and older it would behoove homecare and inpatient facility to focus on in depth education for these individuals according to their learning abilities. By agencies adopting an education program lead by an APN, it will assist HF patients in increasing their quality of life and decreasing Medicare expenditure. EBP statistics has proven that the usage of an APN in homecare patient with heart failure decreases their potential of returning to an inpatient facility within 30 days.

### **Conclusion**

In conducting this project, it was found that patients diagnosed with heart failure understood the material presented, but did not follow a heart failure appropriate lifestyle for various reasons such as financial issues (difficulty in purchasing medication and the appropriate

foods), lack of caregiver support, decreased motivation, etc. It was fulfilling to provide these individuals with not only disease management education, but also financial advice and motivation to want to prosper and become an active part of their health. Although many factors plays a part in patient rehospitalization rates, education remains the cornerstone in helping those with heart failure to be successful.



## Appendix A

Article citation in APA format Article citation in APA format	Purpose of study/research questions	Design type and methods (sampling method/sample size, description of interventions (if any), and outcomes measured	Major findings/findings relevant to project	Critique of validity, bias and significance
<p>Naylor, M., Brooten, D., Campbell, R., Maislin, G., McCauley, K., &amp; Schwartz, J. (2004). Transitional care of older adults hospitalized with heart failure: a randomized, controlled trial. <i>Journal of the American Geriatrics Society</i>, 52(5), 675-684.</p>	<p>Purpose: To examine the effectiveness of a transitional care intervention delivered by APN to elders hospitalized with heart failure.</p>	<p><b>Design and method:</b> descriptive experimental RCT/ Phenomenology Sampling is convenience Size: Enrollees (n=239) non enrollees (n=402) <b>Intervention</b> : 3 mths. The APN was prepared to address CHF</p>	<p>Rehosp. or death was lower in the intervention group</p> <p>There were 104 readmission in the intervention group vs. 162 in the control group.</p> <p>There were 43 intervention patients versus 40 control patients with two fewer re-</p>	<p>Weakness: The intervention group was identified -conducted within the home setting Strengths: Large sample -APN was pre-educated on taking care of CHF patients -Both groups received post d/c instructions -Both groups received home nurse visits. -Numbers for all participants was included (enrollees and non-enrollees) -Participants has similar backgrounds, with difference identified -The article is significant to my project because it entitles the strength that ANP has in preventing re-hospitalization</p>

<p>Research: A missing link? Worldviews on Evidence-Based Nursing, 7(1), 25-30 Retrieved from <a href="http://aumicat.aum.edu:2053/ehost/detail?vid=3&amp;hid=127&amp;sid=">http://aumicat.aum.edu:2053/ehost/detail?vid=3&amp;hid=127&amp;sid=</a></p> <p>LOE - II</p>		<p>pts. and their families, followed by CM strategies foundational to the transition of care provided by APN, then the APN followed the pt. through hospital stay to home.</p> <p><b>Outcome measures:</b> Time to first hospitalization or death, number of hospitalizations, quality of life, functional status, costs, and satisfaction with care.</p>	<p>hospitalizations and 11 intervention pts. versus 28 control pts. with three or more re-hospitalization.</p>	
<p>Leff, B. (2001). Hospital at home: care reduces costs.</p>	<p>Purpose: Will hospital at home based programs reduce cost, readmissions, and</p>	<p><b>Design and method:</b> Descriptive experimental</p>	<p>Shorter length of stay and cost for those with conditions such</p>	<p><b>Weakness:</b> -No difference made in the results of which disease process was readmitted more or less</p>

<p>readmissions, and complications and enhances satisfaction for elderly patients. Retrieved from <a href="http://innovations.ahrq.gov/content.aspx?id=1787">http://innovations.ahrq.gov/content.aspx?id=1787</a></p> <p>LOE - II</p>	<p>complication of elderly people</p>	<p>RCT Sampling is convenience/ pilot study Size:2,293 patients Intervention: The program provided care at hospital level in the patient's home as a substitute for acute hospital care for selected conditions that are common to seniors <b>Outcome measures:</b> Length of hospital stay, number of hospital readmission, quality of life, family satisfaction</p>	<p>as CHF. Fewer readmission and higher quality of life Fewer intervention provide than would have occurred in the hospital</p>	<p>conducted within the home setting - outcome based on patients self-report -Article states that the team conducting the research "applied common sense" to develop clinical criteria.... Missing a lot of key information <b>Strength:</b> Large sample group -This article proves that home care intervention by an can be beneficial in decreasing readmissions -Duration was 52 weeks</p>
<p>McCauley, K., Bixby, B., &amp;</p>	<p>Purpose: "The aim of this study was to</p>	<p><b>Design and method:</b></p>	<p>There were numerous of</p>	<p><b>Weakness:</b> No sample size conducted within the home setting</p>

<p>Naylor, M. (2006). Advanced practice nurse strategies to improve outcomes and reduce cost in elders with heart failure. <i>Disease Management</i>, 9(5), 302-310. Retrieved from <a href="http://aahfn.org/pdf/1L_1_Co-morbid.pdf">http://aahfn.org/pdf/1L_1_Co-morbid.pdf</a></p> <p>LOE - II</p>	<p>investigate whether, in a randomized controlled trial (RCT) of vulnerable elders with heart failure (HF), advanced practice nurses (APNs) who were coordinating care in the transition from hospital to home could improve outcomes, prevent rehospitalizations, and reduce costs when compared with usual care”.</p>	<p>descriptive experimental RCT Sampling is convenience <b>Size:</b> N/A <b>Intervention</b> : The APN visited the patient daily while in the hospital and then 24 hrs. post discharge at home weekly for a month then decrease the freq., The APN followed up with a phone call between visits. The APN teaching method was guided by practice guidelines. the visit was completed by detailed</p>	<p>finding in the study such educational barriers, noncompliance of patients, the effectiveness of the study could be r/t the APN knowing her pts.</p>	<p>-Comparison is against studies previously completed -No clear outcomes measures -Pts. had various backgrounds -Short duration <b>Strengths:</b> -Education prior to d/c from hospital -Similar backgrounds -Sample size background was similar -The APN addressed other issues other than CHF <b>-Significance:</b> the article shows that the APN intervention reduces death and time between hospital readmissions</p>
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		progress notes. <b>Outcome measures:</b> unknown		
<p>Madigan, E. (2008). People with heart failure and home health care resource use and outcomes. <i>Journal of Nursing &amp; Healthcare of Chronic Illnesses</i>, 17(7B), 253-259. Retrieved from <a href="http://aumnicaat.aum.edu:2053/ehost/pdfviewer/pdfviewer?sid=e692e948-d27a-4e62-bd90-daa74302d533%40sessionmgr110&amp;vid=8&amp;hid=105">http://aumnicaat.aum.edu:2053/ehost/pdfviewer/pdfviewer?sid=e692e948-d27a-4e62-bd90-daa74302d533%40sessionmgr110&amp;vid=8&amp;hid=105</a></p> <p>LOE - I</p>	<p>Purpose: To gain understanding regarding patients with heart failure represent outcomes</p>	<p><b>Design and method:</b> Non experimental -descriptive <b>Sample size:</b> 145 191 patients <b>Intervention</b> : N/A <b>Outcome measures:</b> OASIS from CMS</p>	<p>two-thirds of the pts.(64%) remained at home at discharge from home health care 15% of pts. hospitalized during the home health care episode due to exacerbation average length of stay in home health care was 44 days.</p>	<p><b>Weakness:</b> -Sample size not clear -Unsure if pts had similar background due selection from database -No time frame revealed for the following of pts. records. -data dredging -outcome measurement did not include home visit findings -info from agency used depended on pts. and caregiver reports <b>Strengths:</b> -Concise statement of the problem -Used a notable measurement tool -Large effect reported <b>Significance:</b> This articles continue to prove that home care is not as effective as homecare plus APN</p>

<p>Hong, L., Morrow-Howell, N., &amp; Proctor, E. (2004). Post-acute home care and hospital readmission of elderly patients with congestive heart failure. <i>Health &amp; Social Work, 29</i>(4), 275-285. Retrieved from <a href="http://aumnocat.aum.edu:2053/ehost/pdfviewer/pdfviewer?sid=e692e948-d27a-4e62-bd90-daa74302d533%40sessionmgr110&amp;vid=12&amp;hid=105">http://aumnocat.aum.edu:2053/ehost/pdfviewer/pdfviewer?sid=e692e948-d27a-4e62-bd90-daa74302d533%40sessionmgr110&amp;vid=12&amp;hid=105</a></p> <p>LOE - I</p>	<p>The purpose of this study was to examine the independent and joint effects of informal and formal service use on hospital readmission</p>	<p><b>Design and method:</b> quantitative and qualitative  <b>Sample size:</b> 199 participate  <b>Intervention :</b>  <b>Outcome measurements:</b> dependent variable = hospital readmission, independent variables were informal service use, formal service use, and joint use of informal and formal services.</p>	<p>At two weeks after discharge, 70 percent and 96 percent of the elderly respondents needed assistance in at least one area of ADLs or IADLs, respectively. Eighty-three percent of the respondents had multiple hospitalizations during the preceding two years. The average length of hospital stay was 14 days. From the two-week to 14-week follow-up, 35 percent of the elderly respondents had at least</p>	<p><b>Weakness:</b>  - Sample size was consider small by the article  - Only the factors related to hospital readmission at a significance level of 0.10 were retained in the final models.  -missing data in some of the independent variables  -article states that finding maybe insignificant  -included secondary data analysis  -the measurement bias (measurement used may have minimized the effects of informal services per article)  <b>Strengths:</b>  -charts was selected due to similar characteristics  - six month duration of information  <b>Significance:</b> the article stresses the need for formal services post discharge from hospital</p>
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			one hospital readmission	
<p>Stauffer, B., Fullerton, C., Fleming, N., Ogola, G., Herrin, J., Stafford, P., &amp; Ballard, D. (2011). Effectiveness and Cost of a Transitional Care Program for Heart Failure [Abstract] [Supplemental material]. <i>Internal Medicine</i>, 171(14), 1238-1243. Retrieved from <a href="http://archinte.ama-assn.org/cgi/content/abstract/171/14/1238">http://archinte.ama-assn.org/cgi/content/abstract/171/14/1238</a></p> <p>Level II</p>	<p>Purpose: Will nurse-led transitional care programs will reduce readmission rates for patients with heart failure post discharge from an inpatient facility.</p>	<p><b>Design and Method:</b> Quantitative-RCT  <b>Size:</b> N/A  <b>Intervention</b> : nurse-led transitional care programs  <b>Outcome Measures:</b> budget impact analysis</p>	<p><b>Findings:</b> “The intervention significantly reduced adjusted 30-day readmission rates to BMCG by 48% during the postintervention period”</p> <p>“The intervention had little effect on length of stay or total 60-day direct costs for BMCG”</p> <p>“Preliminary results suggest that transitional care programs reduce 30-day readmission rates for patients with heart failure.”</p>	<p><b>Weakness:</b> No sample size  -No complete description of outcome measures  -Short time frame for following patients  -no description on procedures used</p> <p><b>Strengths:</b>  -RCT</p> <p><b>Significance:</b> The shows that the usage of APN is an important factor in caring for the CHF patient in the homecare setting</p>

<p>Stewart S Pearson S Horowitz J</p> <p>1998 Effects of a home-based intervention among patients with congestive heart failure discharged from acute hospital care.</p> <p>[Abstract]. Stewart, S., Pearson, S., &amp; Horowitz, J. (1998). Effects of a home-based intervention among patients with congestive heart failure discharged from acute hospital care.</p> <p>[Abstract]. <i>Archives of Internal Medicine</i>, 158(10), 1067-1072. Retrieved from</p>	<p><b>Purpose:</b> to “examined the effect of a home-based intervention (HBI) on readmission and death among “high-risk” patients with congestive heart failure discharged home from acute hospital care”.</p>	<p><b>Design and Method:</b> Cohort/ RCT</p> <p><b>Sample size:</b> 762</p> <p><b>Intervention</b> : “Home-based intervention comprised a single home visit (by a nurse and pharmacist) to optimize medication management, identify early clinical deterioration, and intensify medical follow-up and caregiver vigilance as appropriate”</p> <p><b>Outcome measures:</b> “Comparison of baseline and end point data”</p>	<p><b>Findings:</b> “Mean cost of hospital-based care tended to be lower for the HBI group (\$3200 [95% CI, \$1800-\$4600]) compared with the UC group (\$5400 [95% CI, \$3200-\$6800])”</p> <p>-“ During follow-up, patients in the HBI group had significantly fewer unplanned readmissions plus out-of-hospital deaths”</p> <p>-</p>	<p><b>Weakness:</b> n/a</p> <p><b>Strengths:</b> Article includes participants that did not complete program and reason</p> <ul style="list-style-type: none"> <li>-includes participants approached</li> <li>-large sample group</li> <li>-clear description of method</li> <li>-study time frame was six months</li> </ul> <p>Significance: The study clearly demonstrates that routine homecare by an agency decrease hospitalization more so than standard homecare.</p>
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<p><a href="http://www.ncbi.nlm.nih.gov/pubmed">http://www.ncbi.nlm.nih.gov/pubmed</a></p> <p>Level II</p>				
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<p><b>Article citation in APA format</b>  <b>Article citation in APA format</b></p>	<p><b>Purpose of study/research questions</b></p>	<p><b>Design type and methods (sampling method/sample size, description of interventions (if any), and outcomes measured</b></p>	<p><b>Major findings/findings relevant to project</b></p>	<p><b>Critique of validity, bias and significance</b></p>
<p>Naylor, M., Brooten, D., Campbell, R., Maislin, G., McCauley, K., &amp; Schwartz, J. (2004). Transitional care of older adults hospitalized with heart failure: a randomized, controlled trial. <i>Journal of the American Geriatrics Society</i>, 52(5), 675-684.</p> <p>Research: A missing link?</p>	<p>Purpose: To examine the effectiveness of a transitional care intervention delivered by APN to elders hospitalized with heart failure.</p>	<p><b>Design and method:</b> descriptive experimental RCT/ Phenomenology  Sampling is convenience  Size: Enrollees (n=239) non enrollees (n=402)  <b>Intervention</b> : 3 mths. The APN was prepared to address CHF pts. and their families,</p>	<p>Rehosp. or death was lower in the intervention group</p> <p>There were 104 readmission in the intervention group vs. 162 in the control group.</p> <p>There were 43 intervention patients versus 40 control patients with two fewer re-hospitalizations and 11</p>	<p>Weakness: The intervention group was identified  -conducted within the home setting  Strengths: Large sample  -APN was pre-educated on taking care of CHF patients  -Both groups received post d/c instructions  -Both groups received home nurse visits.  -Numbers for all participants was included (enrollees and non-enrollees)  -Participants has similar backgrounds, with difference identified  -The article is significant to my project because it entitles the strength that ANP has in preventing re-hospitalization</p>

<p>Worldviews on Evidence-Based Nursing, 7(1), 25-30</p> <p>Retrieved from</p> <p><a href="http://aumicat.aum.edu:2053/ehost/detail?vid=3&amp;hid=127&amp;sid=">http://aumicat.aum.edu:2053/ehost/detail?vid=3&amp;hid=127&amp;sid=</a></p> <p>LOE - II</p>		<p>followed by CM strategies foundational to the transition of care provided by APN, then the APN followed the pt. through hospital stay to home.</p> <p><b>Outcome measures:</b> Time to first hospitalization or death, number of hospitalizations, quality of life, functional status, costs, and satisfaction with care.</p>	<p>intervention pts. versus 28 control pts. with three or more re-hospitalization.</p>	
<p>Leff, B. (2001). Hospital at home: care reduces costs, readmissions, and</p>	<p>Purpose: Will hospital at home based programs reduce cost, readmissions, and complication of elderly people</p>	<p><b>Design and method:</b> Descriptive experimental RCT Sampling is</p>	<p>Shorter length of stay and cost for those with conditions such as CHF.</p>	<p><b>Weakness:</b> -No difference made in the results of which disease process was readmitted more or less conducted within the home setting - outcome based on patients self-report</p>

<p>complications and enhances satisfaction for elderly patients. Retrieved from <a href="http://innovations.ahrq.gov/content.aspx?id=1787">http://innovations.ahrq.gov/content.aspx?id=1787</a></p> <p>LOE - II</p>		<p>convenience/ pilot study Size:2,293 patients Intervention: The program provided care at hospital level in the patient's home as a substitute for acute hospital care for selected conditions that are common to seniors <b>Outcome measures:</b> Length of hospital stay, number of hospital readmission, quality of life, family satisfaction</p>	<p>Fewer readmission and higher quality of life  Fewer intervention provide than would have occurred in the hospital</p>	<p>-Article states that the team conducting the research “applied common sense” to develop clinical criteria.... Missing a lot of key information <b>Strength:</b> Large sample group -This article proves that home care intervention by an can be beneficial in decreasing readmissions -Duration was 52 weeks</p>
<p>McCauley, K., Bixby, B., &amp; Naylor, M. (2006).</p>	<p>Purpose: “The aim of this study was to investigate whether, in a randomized controlled</p>	<p><b>Design and method:</b> descriptive experimental</p>	<p>There were numerous of finding in the study such</p>	<p><b>Weakness:</b> No sample size conducted within the home setting -Comparison is against studies previously completed</p>

<p>Advanced practice nurse strategies to improve outcomes and reduce cost in elders with heart failure.</p> <p><i>Disease Management</i>, 9(5), 302-310. Retrieved from <a href="http://aahfn.org/pdf/1L_1_Co-morbid.pdf">http://aahfn.org/pdf/1L_1_Co-morbid.pdf</a></p> <p>LOE - II</p>	<p>trial (RCT) of vulnerable elders with heart failure (HF), advanced practice nurses (APNs) who were coordinating care in the transition from hospital to home could improve outcomes, prevent rehospitalizations, and reduce costs when compared with usual care”.</p>	<p>RCT Sampling is convenience <b>Size:</b> N/A <b>Intervention</b> : The APN visited the patient daily while in the hospital and then 24 hrs. post discharge at home weekly for a month then decrease the freq., The APN followed up with a phone call between visits. The APN teaching method was guided by practice guidelines. the visit was completed by detailed progress notes.</p>	<p>educational barriers, noncompliance of patients, the effectiveness of the study could be r/t the APN knowing her pts.</p>	<p>-No clear outcomes measures -Pts. had various backgrounds -Short duration <b>Strengths:</b> -Education prior to d/c from hospital -Similar backgrounds -Sample size background was similar -The APN addressed other issues other than CHF <b>-Significance:</b> the article shows that the APN intervention reduces death and time between hospital readmissions</p>
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		<b>Outcome measures:</b> unknown		
<p>Madigan, E. (2008). People with heart failure and home health care resource use and outcomes. <i>Journal of Nursing &amp; Healthcare of Chronic Illnesses</i>, 17(7B), 253-259. Retrieved from <a href="http://aumnocat.aum.edu:2053/ehost/pdfviewer/pdfviewer?sid=e692e948-d27a-4e62-bd90-daa74302d533%40sessionmgr110&amp;vid=8&amp;hid=105">http://aumnocat.aum.edu:2053/ehost/pdfviewer/pdfviewer?sid=e692e948-d27a-4e62-bd90-daa74302d533%40sessionmgr110&amp;vid=8&amp;hid=105</a></p> <p>LOE - I</p>	<p>Purpose: To gain understanding regarding patients with heart failure represent outcomes</p>	<p><b>Design and method:</b> Non experimental -descriptive <b>Sample size:</b> 145 191 patients <b>Intervention</b> : N/A <b>Outcome measures:</b> OASIS from CMS</p>	<p>two-thirds of the pts.(64%) remained at home at discharge from home health care 15% of pts. hospitalized during the home health care episode due to exacerbation average length of stay in home health care was 44 days.</p>	<p><b>Weakness:</b> -Sample size not clear -Unsure if pts had similar background due selection from database -No time frame revealed for the following of pts. records. -data dredging -outcome measurement did not include home visit findings -info from agency used depended on pts. and caregiver reports <b>Strengths:</b> -Concise statement of the problem -Used a notable measurement tool -Large effect reported <b>Significance:</b> This articles continue to prove that home care is not as effective as homecare plus APN</p>

<p>Hong, L., Morrow-Howell, N., &amp; Proctor, E. (2004). Post-acute home care and hospital readmission of elderly patients with congestive heart failure. <i>Health &amp; Social Work, 29</i>(4), 275-285. Retrieved from <a href="http://aumnicat.aum.edu:2053/ehost/pdfviewer/pdfviewer?sid=e692e948-d27a-4e62-bd90-daa74302d533%40sessionmgr110&amp;vid=12&amp;hid=105">http://aumnicat.aum.edu:2053/ehost/pdfviewer/pdfviewer?sid=e692e948-d27a-4e62-bd90-daa74302d533%40sessionmgr110&amp;vid=12&amp;hid=105</a></p> <p>LOE - I</p>	<p>The purpose of this study was to examine the independent and joint effects of informal and formal service use on hospital readmission</p>	<p><b>Design and method:</b> quantitative and qualitative  <b>Sample size:</b> 199 participate  <b>Intervention :</b>  <b>Outcome measurements:</b> dependent variable = hospital readmission, independent variables were informal service use, formal service use, and joint use of informal and formal services.</p>	<p>At two weeks after discharge, 70 percent and 96 percent of the elderly respondents needed assistance in at least one area of ADLs or IADLs, respectively. Eighty-three percent of the respondents had multiple hospitalizations during the preceding two years. The average length of hospital stay was 14 days. From the two-week to 14-week follow-up, 35 percent of the elderly respondents had at least one hospital</p>	<p><b>Weakness:</b></p> <ul style="list-style-type: none"> <li>-Sample size was consider small by the article</li> <li>- Only the factors related to hospital readmission at a significance level of 0.10 were retained in the final models.</li> <li>-missing data in some of the independent variables</li> <li>-article states that finding maybe insignificant</li> <li>-included secondary data analysis</li> <li>-the measurement bias (measurement used may have minimized the effects of informal services per article)</li> </ul> <p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>-charts was selected due to similar characteristics</li> <li>- six month duration of information</li> </ul> <p><b>Significance:</b> the article stresses the need for formal services post discharge from hospital</p>
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			readmission	
<p>Stauffer, B., Fullerton, C., Fleming, N., Ogola, G., Herrin, J., Stafford, P., &amp; Ballard, D. (2011). Effectiveness and Cost of a Transitional Care Program for Heart Failure [Abstract] [Supplemental material]. <i>Internal Medicine</i>, 171(14), 1238-1243. Retrieved from <a href="http://archinte.ama-assn.org/cgi/content/abstract/171/14/1238">http://archinte.ama-assn.org/cgi/content/abstract/171/14/1238</a></p> <p>Level II</p>	<p>Purpose: Will nurse-led transitional care programs will reduce readmission rates for patients with heart failure post discharge from an inpatient facility.</p>	<p><b>Design and Method:</b> Quantitative-RCT  <b>Size:</b> N/A  <b>Intervention</b> : nurse-led transitional care programs  <b>Outcome Measures:</b> budget impact analysis</p>	<p><b>Findings:</b> “The intervention significantly reduced adjusted 30-day readmission rates to BMCG by 48% during the postintervention period”</p> <p>“The intervention had little effect on length of stay or total 60-day direct costs for BMCG”</p> <p>“Preliminary results suggest that transitional care programs reduce 30-day readmission rates for patients with heart failure.”</p>	<p><b>Weakness:</b> No sample size  -No complete description of outcome measures  -Short time frame for following patients  -no description on procedures used</p> <p><b>Strengths:</b>  -RCT</p> <p><b>Significance:</b> The shows that the usage of APN is an important factor in caring for the CHF patient in the homecare setting</p>



<p>Stewart S Pearson S Horowitz J</p> <p>1998 Effects of a home-based intervention among patients with congestive heart failure discharged from acute hospital care.</p> <p>[Abstract]. Stewart, S., Pearson, S., &amp; Horowitz, J. (1998). Effects of a home-based intervention among patients with congestive heart failure discharged from acute hospital care.</p> <p>[Abstract]. <i>Archives of Internal Medicine</i>, 158(10), 1067-1072. Retrieved from</p>	<p><b>Purpose:</b> to “examined the effect of a home-based intervention (HBI) on readmission and death among “high-risk” patients with congestive heart failure discharged home from acute hospital care”.</p>	<p><b>Design and Method:</b> Cohort/ RCT</p> <p><b>Sample size:</b> 762</p> <p><b>Intervention</b> : “Home-based intervention comprised a single home visit (by a nurse and pharmacist) to optimize medication management, identify early clinical deterioration, and intensify medical follow-up and caregiver vigilance as appropriate”</p> <p><b>Outcome measures:</b> “Comparison of baseline and end point data”</p>	<p><b>Findings:</b> “Mean cost of hospital-based care tended to be lower for the HBI group (\$3200 [95% CI, \$1800-\$4600]) compared with the UC group (\$5400 [95% CI, \$3200-\$6800])”</p> <p>-“ During follow-up, patients in the HBI group had significantly fewer unplanned readmissions plus out-of-hospital deaths”</p> <p>-</p>	<p><b>Weakness:</b> n/a</p> <p><b>Strengths:</b> Article includes participants that did not complete program and reason</p> <ul style="list-style-type: none"> <li>-includes participants approached</li> <li>-large sample group</li> <li>-clear description of method</li> <li>-study time frame was six months</li> </ul> <p>Significance: The study clearly demonstrates that routine homecare by an agency decrease hospitalization more so than standard homecare.</p>
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[http://www.ncbi.nlm.nih.gov](http://www.ncbi.nlm.nih.gov/pubmed)

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Level II

<p><a href="http://www.ncbi.nlm.nih.gov">http://www.ncbi.nlm.nih.gov</a></p> <p><a href="http://www.ncbi.nlm.nih.gov/pubmed">v/pubmed</a></p> <p>Level II</p>				
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## Appendix B

# HEART FAILURE ZONES

## EVERY DAY

### EVERY DAY:

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

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

## GREEN ZONE

### ALL CLEAR – This zone is your goal

Your symptoms are under control. You have:

- No shortness of breath.
- No weight gain more than 2 pounds (it may change 1 or 2 pounds some days).
- No swelling of your feet, ankles, legs or stomach.
- No chest pain.

## YELLOW ZONE

### CAUTION – This zone is a warning

Call your doctor's office if:

- You have a weight gain of 3 pounds in 1 day or a weight gain of 5 pounds or more in 1 week.
- More shortness of breath.
- More swelling of your feet, ankles, legs, or stomach.
- Feeling more tired. No energy.
- Dry hacky cough.
- Dizziness.
- Feeling uneasy, you know something is not right.
- It is harder for you to breathe when lying down. You are needing to sleep sitting up in a chair.

## RED ZONE

### EMERGENCY

Go to the emergency room or call 911 if you have any of the following:

- Struggling to breathe. Unrelieved shortness of breath while sitting still.
- Have chest pain.
- Have confusion or can't think clearly.

## Hypertension (High Blood, High Blood Pressure)

Date: \_\_\_\_\_

Hello: \_\_\_\_\_

Today your blood pressure is:



It is important that we get the top number of your blood pressure to below 140. 120 is perfect.

The closer we get your blood pressure to 120/70 the less chance you'll have of having a heart attack, stroke, or kidney disease.

You can help by lowering your daily use of salt (called sodium on food labels). Walking 30 minutes a day will help as well.

## Appendix C

**INFORMED CONSENT****for a Research Study entitled****“Congestive Heart Failure In Homecare Patients”**

**You are invited to participate in a research study** to determine if patients with congestive heart failure will the addition of an Advance Practice Nurse (APN) monitoring (telephonic and/or visit) educations versus routine homecare alone help promote greater self-care and prevent exacerbation within six months post discharge from an inpatient facility. The study is being conducted by myself Gwendolyn Childress RN, under the direction of Kathy J. Ellison DSN, RN in the Auburn University Department of Nursing. You were selected as a possible participant because you have and diagnosis of Congestive Heart Failure (CHF), recently discharged from an inpatient facility, and are age 19 or older

**What will be involved if you participate?** If you decide to participate in this research study, you will be asked to provide accurate information, participate in your plan of care, accept the consequences for any refusal of treatment, and remain under the supervision of your medical doctor and Gentiva Health Services. In addition, you will be expected to notify your Healthcare agency and investigator of any new changes in your health prior to visiting hospital or emergency department. Your total time commitment will be approximately 30-60 min per week.

**Are there any risks or discomforts?** A Breech in confidentiality could occur. You are responsible for any costs associated with medical treatment.

**Are there any benefits to yourself or others?** Benefit of participating in the study is gaining self-care knowledge, which will ultimately lead to prevention of re-hospitalization within six months. In addition, the information gathered from this study may aid your home care agency in choosing the best intervention for congestive heart failure patients. There is no guarantee that these benefits will occur from this study.

**Will you receive compensation for participating?** There will be no compensation for participating in this study.

**Are there any costs?** If you decide to participate, there will be no cost to you. You will still have financial responsibilities to your healthcare provider.

**If you change your mind about participating,** you can withdraw at any time during the study. Your participation is completely voluntary. If you choose to withdraw, your data can be withdrawn as long as it is identifiable. Your decision about whether or not to participate or to stop participating will not jeopardize your future relations with Auburn University, the Department of Nursing.

**Your privacy will be protected.** Any information obtained in connection with this study will remain confidential. Information obtained through your participation may be used to fulfill an educational requirement, presented at a professional meeting, etc.

**If you have questions about this study,** please ask them now or contact **Gwendolyn Childress BSN, RN at 334-215-0334 or 334-412-3798 or Kathy J Ellison DSN, RN at 334-844-6761.** A copy of this document will be given to you to keep.

**If you have questions about your rights as a research participant,** you may contact the Auburn University Office of Human Subjects Research or the Institutional Review Board by phone (334)-844-5966 or e-mail at [hsubjec@auburn.edu](mailto:hsubjec@auburn.edu) or [IRBChair@auburn.edu](mailto:IRBChair@auburn.edu).

**HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE WHETHER OR NOT YOU WISH TO PARTICIPATE IN THIS RESEARCH STUDY. YOUR SIGNATURE INDICATES YOUR WILLINGNESS TO PARTICIPATE.**

\_\_\_\_\_

**Participant's signature      Date      Printed Name**

\_\_\_\_\_

**Investigator obtaining consent Date      Printed Name**

\_\_\_\_\_

**Co-Investigator                      Date      Printed Name**

**RECRUITMENT SCRIPT** (verbal/ in person)

My name is Gwendolyn Childress a graduate student from the Department of Nursing at Auburn University and an employee with Gentiva Health Services. I would like to invite you to participate in my research study to promote self-management and prevent exacerbation in congestive heart failure patients. You may participate if you are enrolled in a Medicare approved home care, between the ages of 55-75, recently discharged from an inpatient facility, and have a diagnosis of congestive heart failure. Please do not participate if you are currently enrolled in a Medicare home health service, do not have a diagnosis of CHF, or not between the ages of 55-75.

As a participant, you will be asked to allow the graduate student to visit or call at least one to two times a week

The risk associated with this product is breach of confidentiality, but precaution such as coding any identifiable such as name, date of birth, etc.

If you would like to participate in this research study, you may state so at this time or call me back at a later date. My name is Gwendolyn Childress and phone number is 334 412-3798.

Do you have any questions now? If you have questions later, please contact me at 334-412-3798 or you may contact my advisor, Dr. Kathy Ellison, at 334-844-6761.

Thank you for your time.



## Appendix E

**Self-Efficacy for Managing Chronic Disease 6-Item Scale**

We would like to know *how confident* you are in doing certain activities. For each of the following questions, please choose the number that corresponds to your confidence that you can do the tasks regularly at the present time.

**1. How confident are you that you can keep the fatigue caused by your disease from interfering with the things you want to do?**

Not at all confident    1   2   3   4   5   6   7   8   9   10    Totally confident

**Items (using the same format as above):**

1. How confident are you that you can keep the fatigue caused by your disease from interfering with the things you want to do?
2. How confident are you that you can keep the physical discomfort or pain of your disease from interfering with the things you want to do?
3. How confident are you that you can keep the emotional distress caused by your disease from interfering with the things you want to do?
4. How confident are you that you can keep any other symptoms or health problems you have from interfering with the things you want to do?
5. How confident are you that you can do the different tasks and activities needed to manage your health condition so as to reduce you need to see a doctor?
6. How confident are you that you can do things other than just taking medication to reduce how much you illness affects your everyday life?

### MINNESOTA LIVING WITH HEART FAILURE® QUESTIONNAIRE

The following questions ask how much your heart failure (heart condition) affected your life during the past month (4 weeks). After each question, circle the 0, 1, 2, 3, 4 or 5 to show how much your life was affected. If a question does not apply to you, circle the 0 after that question.

Did your heart failure prevent you from living as you wanted during the past month (4 weeks) by -	Very Little					Very Much
	No	1	2	3	4	
1. causing swelling in your ankles or legs?	0	1	2	3	4	5
2. making you sit or lie down to rest during the day?	0	1	2	3	4	5
3. making your walking about or climbing stairs difficult?	0	1	2	3	4	5
4. making your working around the house or yard difficult?	0	1	2	3	4	5
5. making your going places away from home difficult?	0	1	2	3	4	5
6. making your sleeping well at night difficult?	0	1	2	3	4	5
7. making your relating to or doing things with your friends or family difficult?	0	1	2	3	4	5
8. making your working to earn a living difficult?	0	1	2	3	4	5
9. making your recreational pastimes, sports or hobbies difficult?	0	1	2	3	4	5
10. making your sexual activities difficult?	0	1	2	3	4	5
11. making you eat less of the foods you like?	0	1	2	3	4	5
12. making you short of breath?	0	1	2	3	4	5
13. making you tired, fatigued, or low on energy?	0	1	2	3	4	5
14. making you stay in a hospital?	0	1	2	3	4	5
15. costing you money for medical care?	0	1	2	3	4	5
16. giving you side effects from treatments?	0	1	2	3	4	5
17. making you feel you are a burden to your family or friends?	0	1	2	3	4	5
18. making you feel a loss of self-control in your life?	0	1	2	3	4	5
19. making you worry?	0	1	2	3	4	5
20. making it difficult for you to concentrate or remember things?	0	1	2	3	4	5
21. making you feel depressed?	0	1	2	3	4	5

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11/10/04

## Appendix E

### Timeline

January 16-18, 2012

- Review current CHF patients' OASIS-C from admission, TIF (if present) and discharge information. Compare their functional score.

January 19- January 20, 2012

- Talk with two case managers and admission nurse regarding assisting in the small test of change. Review details of the change in entirety with them

January 23- January 24, 2012

- Review Gentiva's database for ten to fifteen individuals admitted to home care with the diagnosis of CHF within the last 14 days, within their second recertification period and/or have had complication related to their CHF during their home care period.

January 25-27, 2012

- Begin to call the individuals regarding participating in the small test of change.
- Make home visit to obtain informed consents and begin education process, medication reconciliation, etc.
- Give self-efficacy and MLQ questionnaire
- Tuck-in call at the end of the week

January 30 - February 3, 2012

- Make second visits to consenting individuals and provide them with medication profile and needed equipment
- Review patient's knowledge of information taught on last visit. Educate patient regarding process and medication

- Tuck-in call at the end of the week

February 6- 10, 2012

- Review patient's knowledge of information taught on last visit. Educate patient on signs and symptoms to report and review medication.
- Tuck-in call at the end of the week

February 16- February 20, 2012 (final education visit)

- Review patient's knowledge of information taught on last visit. Review diet and fluid restriction and medication education
- Tuck-in call at the end of the week

February 13- March 9, 2012

- Weekly phone calls to monitor patient status and progress

March 12- March 16, 2012

- revisit participant and discuss any question or concern
- Give self-efficacy and MLQ questionnaire

	Budget
Digital Scales:	140.00
Electronic blood pressure monitors:	\$200.00
Paper:	\$15.00
Ink:	\$50.00
Gasoline:	<u>\$100.00</u>
Total	\$505.00

\*\*\*All-expenses will be assumed by the investigator \*\*\*

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