Spring 5-23-2015

Telephone Calls To Reduce 30-Day Readmissions For Older Adults With Heart Failure

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Telephone Calls To Reduce 30-Day readmissions For Older Adults With Heart Failure

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Abstract

**Purpose:** The purpose of this evidenced based practice project was to evaluate the effectiveness of discharge follow-up calls for older adult heart failure (HF) patients recently discharged from a private hospital in southern California.

**Background:** HF is the number one discharge diagnosis among patients 65 years and older. It affects 5.8 million people in the United States and another estimated 23 million people worldwide. HF admissions total (1) million annually, however, 24% of these patients are readmitted within 30 days of discharge. Re-hospitalizations are associated with high mortality rates and expenditures approximated at $13,000 per patient contributing to the overall annual expenditure of $33.7 billion. In 2012, the Centers for Medicare and Medicaid (CMS) initiated the Hospital Readmission Reduction Program (HRRP) to assess a maximum 3% penalty for excessive 30-day readmissions. Extensive research shows that high readmission rates are primarily due to either HF patients or their caretaker’s lack of knowledge and skills regarding self-care management and/or numerous variations in hospital-based care and homecare regimens. Research also suggests that self-care using follow-up calls are effective to reduce early readmissions by as much as 23%. In this project facility, the average readmission rate was 15%.

**Practice Change:** The purpose of this evidence-based practice project was to reduce the number of HF patient readmissions by 20%. The Iowa Model of Evidence-Based Practice was used as a framework for the project. HF patients recently discharged were identified in collaboration with the hospital’s Health Information Management and Quality Assurance/Improvement Departments. Using a callback form based on Krames Education format, patients were contacted post-discharge at 24-48H, day 10-15, day 20-25, and day 30-31. During each call, data collection focused on clinical measurements including daily weight, patient reports of symptoms of HF exacerbation, as well as education reinforcement pertaining to diet modification and medication compliance. Symptomatic patients were referred to their primary care provider (PCP) for evaluation. During the practice change process, patient chart reviews were conducted to monitor for readmissions.

**Results:** Data were obtained using admission and discharge information from chart reviews as well as from details extrapolated from Cerner - the electronic medical record system. The intervention group consisted of 13 participants’ who received follow-up calls. Outcomes included 1 of 13 participants readmitted within 30 days of discharge, a 7.7% readmission rate. Similarly, after 60 days following discharge, the readmission rate was maintained at a 7.7%. In contrast, those participants who were not included in the practice change experienced a 30-day readmission rate of 17% (10 out of 58) as well as a 60-day readmission rate of 24%, or 14 out of 58 HF patients.

**Conclusion/Implications:** By assuming a leadership role in establishing structured telephone follow-up calls for HF patients, advanced practice nurses can play an integral role in improving access to care that can yield improved patient outcomes. This intervention should be explored as standard procedure in similar type settings. Outcomes resulted in more effective patient self-care management coupled with a reduction in readmissions. This can conceivably decrease costs for health care delivery systems as well as yield a better quality of life for HF patients.
BACKGROUND

Heart Failure (HF) is a chronic condition that occurs when the heart is damaged and weakened from conditions such as myocardial infarction, hypertension, or infection thereby losing its ability to meet the metabolic demands of the body (AHA, 2015). HF affects both the cardiovascular and the respiratory systems, which often result in frequent hospitalizations due to acute exacerbations associated with excessive fluid accumulation in the body, especially in the lungs.

HF is the number one discharge diagnosis among patients 65 years and older (Chien, Chen, Garet & Wang, 2010; Evangelista et al., 2010). It affects 5.8 million people in the United States and another estimated 23 million people worldwide (McGreal, Hogan, Walsh-Irwin, Maggio & Jurgens 2014; Sales et al., 2013; United States Census Bureau, 2015). The prevalence and incidence is projected to increase from 5 million to 8 million in 2030 (Chien et al., 2010; Muus et al., 2010). HF admissions total (1) million annually (Black et al., 2014) and 24% of these patients are readmitted within 30 days of discharge (Schmeida & Savrin, 2012) resulting in 1 of 9 deaths annually (United States Census Bureau, 2015). According to Radhakrishnan & Jacelon (2012), one-third to one-half of all HF readmissions could be prevented if individuals were able to manage their self-care regimen more effectively at home as many hospitalizations are related to preventable symptom management (McGreal et al., 2014). Currently, one-fifth of all Medicare beneficiaries, or 2.6 million seniors, (Krumholz, 2013) is readmitted within 30 days of discharge.

Costs for readmissions range from approximately $13,000 (Schmeida & Savrin, 2012) to $18,000 per admission (Basoor et al., 2013). The cost increases to
approximately $23,000 (Evangelista et al., 2010) per admission when HF is the secondary diagnosis (Wang, Zhang, Ayala, Wall & Fang, 2010). Overall, the annual expenditure of $37 billion is expected to increase 240% by the year 2030 (Basoor, et al., 2013) to $53 Billion (Heidenreich et al., 2013) due to related healthcare services, medication, and lost productivity (Stamp, Machado & Allen 2013; Takeda et al, 2012; Thompson, Kelly, Grossman & Banerjee, 2014).

Reducing readmission rates could conceivably result in a Medicare savings of hundreds of millions of dollars nationwide. Ninety percent of readmissions are unplanned costing the government $17 billion in readmission fees alone (Stamp et al., 2013). Frequent readmissions, especially with vulnerable populations, are multifactorial and tend to be associated with poor healthcare outcomes due to alterations in nutrition, hydration, sleep, acute pain or distress, and physical deconditioning from their regular activity (Krumholz, 2013). These changes frequently result in decreased quality of life, tremendous financial and personal burden due to lost wages and limitations in self-care as well as increased mortality (Stamp et al., 2013; Radhakrishnan & Jacelon, 2012). Conversely, older adults and those with other chronic comorbid conditions are often put on a regimen of medications that can alter their memory (Krumholz, 2013) and physical stance contributing to medication non-compliance, falls, and even higher health care costs (Stamp et al., 2013). Since the patient is the most important member of a multidisciplinary team (White, Kirschner & Hamilton, 2013), it is paramount that patient education focused on early symptom recognition in addition to establishing a daily routine specific to HF self-care be initiated to promote prompt identification of alterations and seeking out primary or specialty care.
LOCAL PROBLEM

Beginning in October 2012, the Affordable Care Act began assessing a 1% penalty to hospitals with excess readmissions rates. The penalty has since risen to 3% (Stamp et al., 2013). Although, the project facility's readmission rate averaged 15%, which is below the national rate of 24% as well as state and county rates of 26% and 27.2% respectively (United States Census Bureau, 2015), hospital administrators and key stakeholders were proactive regarding potential increases in readmission rates. One approach was to budget for an RN Nurse Navigator (NN) to help incorporate transitional care for HF patients. This new role was to assist with performing discharge instructions and follow-up phone calls for a minimum of one-month post hospitalization. The intent was to promote HF patient self-care knowledge and skills to reduce frequent and preventable readmissions yielding an overall cost reduction to the healthcare system and better quality of life for the patients.

PURPOSE OF THE PROJECT

The purpose of this evidence-based practice (EBP) project was to reduce 30-day readmission rates for HF patients by incorporating a structured telephone support (STS) system, utilizing discharge instructions and follow-up calls with adult HF patients recently discharged from a southern California hospital.

EVIDENCE

The majority of 30-day readmissions are unplanned (Stamp et al., 2013). Frequently, acute exacerbations of HF are due to lack of, or delayed symptom recognition, poor quality care, patient non-compliance, and/or problems with access to care (Ades et al., 2013; Muus et al., 2010). Many repeat hospitalizations are solely for
symptom management and considered avoidable (McGreal, et al., 2014). For example, a HF patient may simply require an administration of furosemide in order to effectively manage early-onset symptomatology (Malloy, Carroll, Whitham, & McMurdo, 2012). However, the HF patient must be able to recognize early onset symptoms such as weight gain and be able to confidently determine that PRN prescribed furosemide should be administered. In fact, studies show self-care, especially when focused on medication compliance and symptom recognition, is critical to decreasing HF exacerbations (Malloy et al, 2012).

The lack of collaboration between healthcare professionals contributes to the disparity in care and missed opportunities for health professionals to educate the HF patient population (Ades, et al., 2013). Studies on health literacy confirmed disease education combined with tailored interventions including follow-up calls could significantly reduce all-cause mortality and hospitalizations (Evangelista et al., 2010). In a recent study using trained volunteers to perform follow-up calls (Sales et al., 2013) that stressed dietary modification and pharmacologic education, a significant reduction in 30-day readmissions was observed (19% decrease in 30-day readmission compared to only a 7% reduction in the standard care group). Improvements in the New York Heart Association (NYHA) functional status and decreased mortality rates in the intervention group were also observed and proved superior to the standard care group (Sales et al., 2013). Furthermore, the impact of home patient monitoring on HF specific medication use has proven to decrease mortality and hospital readmissions by stressing the importance of HF medication adherence (Antonicelli, Mazzanti, Abbatecola & Parati, 2010). This study confirmed that measuring relevant clinical parameters was associated
with increased use of HF medication, such as beta-blockers, and has been shown to improve HF outcomes (Antonicelli et al., 2010). Likewise, data from 18 random controlled trials (RCTs) showed strong evidence of improved quality of life (QOL) and decreased readmission rates using post-discharge support immediately following discharge (Sales et al., 2013).

As a result of advancing technology and increased personal access to mobile devices, HF trials using complex telemonitoring equipment has been rapidly evolving (Inglis, Clark, McAlister, Stewart, & Cleland, 2011). The use of technology has been shown to improve the recipient’s knowledge pertaining to the disease leading to decreased overall mortality (Inglis et al., 2011). In a meta-analysis (Inglis et al., 2011) of peer reviewed randomized controlled trials, the most effective intervention in reducing hospital readmissions was STS employing simple telephone follow up calls. In this comparison study between complex telemonitoring (2,710 participants) and STS (5,613 participants), self-care implemented using STS with simple telephone calls was statistically significant. Although both were effective in reducing the risk of HF readmissions, simple follow up calls proved to be slightly superior regarding ease of use and reduced costs. Many patients benefit from utilizing personalized discharge follow up calls and/or telehealth intervention. Another example of the importance of patient self-care management resulted in significant improvements in HF self-care behaviors including daily weighing (P < .05), medication management (P < .03), exercise adherence (P < .01), fluid and alcohol restriction (P < .05), salt restriction (P = .01) and stress reduction (P < .01) (Radhakrishnan & Jacelon, 2012). Furthermore, this study concluded that enhancements in self-care behaviors were accompanied by a decrease in HF
symptomatology such as dyspnea, edema and low energy levels resulting in fewer hospitalizations and emergency department visits.

SETTING

The project facility opened in October 2013. The hospital is owned and operated by a large for-profit organization. The new facility is a 140-bed, single room, acute care hospital initially serving the city's 100,000 residents. Most of the cities’ clients have private, government, or military medical insurance, but with the closure of a nearby community hospital and its recent accreditation as a Stroke, Chest Pain and Open Heart Surgery Facility, the hospital has seen an increase in the number medically underserved and uninsured residents. The project site is only 1 of 2 specialty medical centers in the area and now licensed to provide care to the 300,000 residents within its surrounding cities.

PRACTICE CHANGE

The Iowa model of Evidence Based Practice (see Figure 1) was used as a foundation for the practice change. The focus was to use telephone follow-up calls to increase the health provider’s interaction with the participants in order to promote enhanced self-care (Titler, et al 2001). Institutional Review Board (IRB) approval was obtained from the hospital and affiliated university. The patients that were selected to participate were identified by the hospital's quality assessment and improvement department (QA/I) in an attempt to meet the core measures. These HF patients were extrapolated from the daily list of new admits with either a primary or secondary diagnosis of HF and contacted prior to discharge. Pre-existing data were collected for the routine purpose of monitoring HF admissions, discharges, and readmissions within 30
days of discharge. Participants’ responses to weekly phone calls were documented in a project log and on the follow-up form.

Based on the Krames HF education module, a form (see Figure 2) used by another Bay area hospital incorporating a similar practice change provided the HF specific questions for this project. The HF form focused on patient compliance type questions and the project implementer provided rationales for each question when discussing the content. The calls concentrated on four key components: Daily weights, HF symptoms, diet modification, and medication compliance. Examples of the questions asked were: Did you weigh yourself today? Since our last conversation, have you gained more than 2 pounds (lbs.) in a day or 5 lbs. in a week? What was your weight today? In the last week, did you suffer from shortness of breath or activity intolerance? Do you have any swelling in your lower legs or feet? From the time of discharge, have you taken all your medications as prescribed? What date and with whom is/was your follow up appointment schedule?

The participants were contacted 1-2 days after discharge and requested to participate in discharge follow-up calls for one month to determine if the intervention assisted in decreasing 30-day readmissions. Participants were called a total of four times with an initial call 24-48 hours post discharge with additional calls at day 10-15, day 20-25, and day 30-31. The first call was the longest, lasting an average of 30 minutes. Introductions were made and the purpose of the calls was discussed in detail. Once it was determined that the patient had a home scale, the patient was given information on HF education, the importance of daily weights, early symptom recognition, medication compliance, reconciliation, and dietary modification. Their body weight was recorded
and used as a baseline. The second call (about a week later) was shorter in duration and lasted approximately 20 minutes. The call focused on HF disease re-education as well as the questions on the HF form. A link to the target HF education was also provided to interested patients. The third call was the shortest and followed the same follow-up question format. One patient explained that he didn't feel the need to weigh himself daily because he felt good and did not believe it was necessary. However, the majority enjoyed keeping a log of their weight and had been tracking weight changes previously for cosmetic reasons only. Now, however, they realized the benefit of weight tracking for improved HF self-care. Overall, the participants concluded that they understood the benefit of self-care management and the importance of symptom recognition in decreasing unnecessary hospitalizations. Most participants said they would continue with the self-care intervention beyond the 30-day study. During the last call, – after the routine questions were asked and the information obtained, - participants were thanked for their time. All discussions were interactive and responses to all questions were provided.

**COSTS**

There was minimal cost associated with this project and all expenditures, including the hospital’s telephone and copy machine, were covered by the practice facility. The project site currently receives $16,200 for each HF admission; $1,300 more than the national average reimbursed ($15,200) due to the practice facility’s designation as a STEMI receiving facility. During January 2014 through January 2015, 165 HF patients were admitted to the facility totaling $2.6 million in revenue. At the completion of this project, CMS had yet to assess the 3% penalty to the facility for excess HF readmissions, which would total around $500 for each occurrence.
One option being considered is for the hospital to provide a transition to home service, which includes an APRN to perform a follow up visit within 7-14 days of discharge. This service is billable to CMS using CPT codes 99495 and 99496 at $175-$245 (Administration on Aging, 2014). Based on the facilities’ 165 HF admissions last year, this would equate to $40,000 versus the cost to hire an APRN at approximately $100,000 annually.

EVALUATION METHODS

During the evaluation phase of this project, readmission rates were obtained 30 days during and 30 days after intervention from October 2014 through January 2015 (see figure 5). Pre and post results were obtained from participants during follow-up calls. Participants’ readmission status for January 2015 (see figure 4) was also obtained, as was the 30-day observational period without follow-up intervention.

DATA ANALYSIS

The follow-up form was used to log each call and provided an organized system for documentation that participant’s calls had been completed. In addition, this process allowed further education and/or explanations to be provided, where necessary, based on the response and data obtained. Although difficult for one person to perform, this process allowed the project implementer to serve as the sole interventionist. The analysis of the data from the phone calls was plotted using the pre and post data information. The pre and post-intervention data are displayed using percentages (See figure 5).

RESULTS

Initially, the total number of potential participants was 27 HF patients but only 13 met the inclusion criteria and 12 completed the complete practice change. Of the 13
eligible participants, 1 was readmitted within 30 days of discharge due to an electrolyte imbalance. This yielded a 7.7% readmission rate at both 30 and 60 days post-intervention. The 14 participants who were not included consisted of: Six (6) patients who were discharged to a skilled nursing facility (SNF); four (4) patients had a history of HF but HF was not their primary or secondary diagnosis for the current admission: two (2) expired in the intensive care unit (ICU); one (1) patient transferred to another nearby medical center for a complicated cardiac intervention; and one (1) patient did not have a home scale and chose not to participate. Of the 58 patients who continued to receive only usual care, 10 were readmitted within 30 days of discharge for a 17% readmission rate while at 60 days, 14 were readmitted for a 24% readmission rate.

CONCLUSIONS

In closing, it is important to comment about the challenges with completing this project. It was problematic at times for one person to manage the data collection, perform chart inquiries and reviews, and schedule meetings with the Quality Director, due to limitations of time and availability of both parties. Also, the follow-up phone calls proved to be a major time challenge, especially the first call, which lasted about 30-45 minutes. During the initial call, basic knowledge was assessed, medication reconciliation was performed, disease management was reviewed, plan of care discussed and a verbal informed consent was obtained. The client’s questions were answered and any HF content clarification needed was immediately provided. Clearly, time must be a major consideration when planning a similar experience in any health care setting. Yet, the structured telephone calls yielded positive outcomes. Even though this project consisted of a small number of HF patients, the results were highly consistent with the plethora of
literature (Evangelista et al., 2010; Inglis et al., 2011; Radhakrishnan & Jacelon, 2012; Sales et al., 2013; Stamp et al., 2013) that provides scientific support to incorporate telephone calls by a nurse into a post discharge HF self-care program in order to reduce or prevent hospital readmissions.

Quality healthcare in the United States of America remains suboptimal and fragmented (Naylor, Aiken, Kurtzman, Olds & Hirschman, 2011). This inadequacy most often affects patients with chronic conditions since they are more likely to experience recurrent changes in their health status, transition frequently between care settings, and receive care from multiple providers (Naylor et al., 2011). HF is complicated and adequate care is multifactorial. The healthcare provider cannot successfully manage the HF patient’s care alone necessitating that patients have key roles in their self-care (Elsawy & Higgins, 2011). In fact, one study emphasizes that patients must be accountable and responsible for their health care in order to slow the progression of the disease and improve their quality of life (Elsawy & Higgins, 2011). Another study stressed the importance of healthcare providers adequately assessing the patient’s readiness for discharge by eliminating the breakdown in communication and information transfer between hospital-based and community partners, and ensuring that older patients with HF receive comprehensive discharge planning from a multidisciplinary team (Philips et al., 2004; Takeda, 2012). HF patients who were provided discharge instructions on activity, weight, diet, medications, appointments and worsening symptoms were less likely to be readmitted (Schmeida & Savrin, 2012).

The prevalence of HF in older adults is of epidemic proportions and expected to increase substantially by 2030 (Basoor et al., 2013). Although evidence based practice
and up to date management is an important element in managing unplanned readmissions, the critical factor in HF care, especially during the transitional phase remains self-care. Nurse practitioners and other healthcare providers have the opportunity to assist by improving the discharge process for HF patients within their organization ensuring that disease-specific discharge instructions are understood (Takeda et al., 2012) and some form of transitional care program is initiated (Thompson et al., 2014). Likewise, advanced practice registered nurses (APRN’s) can assume the lead and play an integral role in providing evidence based care to patients. Follow-up phone calls focusing on HF, especially self-interventions, is an efficient and economical way for healthcare facilities to reduce HF readmissions, decrease healthcare costs, and improve QOL (Basoor et al., 2013). Keeping in mind that the patient is the most important member of this multidisciplinary team (White et al., 2013), comprehensive discharge planning plus discharge support are vital to allow the patient to be effective in their own care. This will empower the patient to quickly identify alterations and seek care fast as it is most advantageous for reducing readmission rates and improving their own health outcome.
Figure 1.
Figure 2.

<table>
<thead>
<tr>
<th>Patient: ___________________________</th>
<th>Phone #: ___________________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>MR#: ___________________________</td>
<td>Diagnosis: ___________________________</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>---------------------------------------</td>
</tr>
<tr>
<td>Pertinent History: __________________</td>
<td></td>
</tr>
<tr>
<td>Date of Admission: <em><strong>/</strong></em>/_____</td>
<td>Date of Discharge: <em><strong>/</strong></em>/_____</td>
</tr>
<tr>
<td>Primary MD: ______________________</td>
<td>Cardiologist: ______________________</td>
</tr>
<tr>
<td>Follow up:</td>
<td></td>
</tr>
<tr>
<td>Yes / No: Follow up appointment made with MD: ordered: ______ Date_______</td>
<td></td>
</tr>
<tr>
<td>Yes/ No/ re-educate: What is the name of your water pill? ________________</td>
<td></td>
</tr>
<tr>
<td>Yes/ No/ Issues addressed: Medication Reconciliation Done. ______________</td>
<td></td>
</tr>
<tr>
<td>Yes/ No: Following Diet ________________________________</td>
<td></td>
</tr>
<tr>
<td>Yes/ No/ Re-educate: What foods should you limit or avoid? Canned foods; packaged foods; fast foods; salt shaker.</td>
<td></td>
</tr>
<tr>
<td>Yes/ No: Daily Weights done: Wt change or swelling: ____________________</td>
<td></td>
</tr>
<tr>
<td>Yes/ No/ Re-educate: What weight gain should you report to your MD? 3#/1 day; 5#/week.</td>
<td></td>
</tr>
<tr>
<td>Yes/ No/ Re-educate: What symptoms do you report? SOB, more swelling; tired; cough; uneasy feeling; chest pain: ____________________</td>
<td></td>
</tr>
<tr>
<td>Yes/ No: Understands Activity/Exercise: ________________________________</td>
<td></td>
</tr>
<tr>
<td>Yes/ No: Has Education Materials: ________________________________</td>
<td></td>
</tr>
</tbody>
</table>
Figure 3.

**Average HF readmits = 15%**

**Monthly HF readmissions**

- **HF Readmit over Total HF patients**
- **CL:** 0.1533
- **UCL:** 0.4080
- **HF Readmits:**
  - April 2014: 0.10
  - May 2014: 0.15
  - June 2014: 0.20
  - July 2014: 0.50
  - August 2014: 0.15
  - September 2014: 0.05
  - October 2014: 0.05
  - November 2014: 0.05
  - December 2014: 0.05
  - January 2015: 0.10
Figure 4.
Figure 5.

<table>
<thead>
<tr>
<th></th>
<th>Number of HF patients</th>
<th>Number of 30-day Readmissions</th>
<th>Number of 60-day readmissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>HF Participants</td>
<td>13</td>
<td>1 (7%)</td>
<td>1 (7%)</td>
</tr>
<tr>
<td>Practice facility’s standard care group</td>
<td>58</td>
<td>10 (17%)</td>
<td>14 (24%)</td>
</tr>
</tbody>
</table>
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Poster Abstract

TELEPHONE SUPPORT TO DECREASE 30-DAY READMISSIONS FOR OLDER ADULTS WITH CONGESTIVE HEART FAILURE
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Purpose: The purpose of this evidenced based practice project is to evaluate the effectiveness of Discharge Follow-up Calls (f/u) for older adult Congestive Heart Failure (CHF) Patients recently discharged from a hospital in southern California.

Background: CHF is the number one discharge diagnosis among patients 65 years and older, affecting 5.8 million people in the United States and an estimated 23 million people worldwide. CHF totals (1) million yearly admissions and 27% are readmitted within 30 days of discharge. Re-hospitalizations are associated with high mortality rates and cost up to $13,000 per patient, contributing to the annual $33.7 billion dollar total cost. Beginning in 2012, The Centers for Medicaid and Medicare (CMS) initiated the Hospital Readmission Reduction Program, where 30-day readmissions would no longer be compensated. Patients with CHF and frequently their caretakers are overwhelmed due to the lack of knowledge and skills regarding self-care management. Extensive research on CHF readmissions reinforces the use of f/u calls as the intervention of choice to prevent early readmissions and all cause early readmissions as evidence by a reduction by 30%. In fact benchmark data retrieved from past research confirms a clinical and statistical significance when using STS to prevent early readmissions. In the project facility there is and average early readmission rate of 8%.

Practice Change: The purpose of this evidence-based practice project is to reduce the number of heart failure patient readmissions by 20% at a private hospital in southern California. The Iowa Model of Evidence Based Practice will be used to guide practice decisions. CHF patients who have recently been discharged from the hospital will be identified in collaboration with the hospital’s Health Information Management and the Quality Assurance /Improvement Departments. Using the Valley Care Health System Education Heart Failure call back form, patients will be contacted post discharge at 24-48H, day 10-15, day 20-25, and day 30-31. Data collection will specifically focus on clinical measurements including daily weight, diet modification, and symptoms of edema and dyspnea.

Results: In progress: It is anticipated that there will be a 20% reduction in the number of readmissions following the use of discharge follow-up calls.

Conclusion/Implications: Nursing research is critical to the advancement of nursing and is subject to strict scientific analysis that often leads to practice EBP. Utilizing EBP in the form of STS is cost effective in reducing CHF readmissions, which are associated with poor outcomes. Individuals who are educated about their disease process, compliant with taking prescribed medications and participate in their healthcare regimen have reduced readmissions, better QOL, and improved outcomes.
Telephone Calls to Decrease 30 Day Readmissions for Older Adults with Heart Failure
Juanette Clark, BSN, RN-BC, DNP Student
Shelley Hawkins, PhD, APRN-BC, GNP, FAANP • Heather Adams, DNP, MSN, CNS-BC, CMSRN

BACKGROUND
- HF is a chronic condition that affects 5.8 million people in the U.S. and 23 million people worldwide.\(^\text{1,2}\)
- HF is currently the number one discharge diagnosis in patient's 65 years and older.\(^\text{3}\)
- HF totals over 1 million hospital admissions and readmissions every year.\(^\text{4}\)
- HF costs $31,000 – $23,000 per HF admission and $33.7 billion annually.\(^\text{5,6}\)
- The National HF readmission rate is 23%, CMS goal is below 20%.\(^\text{5,7}\)
- TVH HF readmission rate is currently 15%.\(^\text{8}\)

PURPOSE
The purpose of this evidence-based practice (EBP) project was to reduce 30-day readmission rates for older adult HF patients by incorporating a structured telephone support (STS) system, utilizing discharge follow-up (f/u) calls, with adult HF patients recently discharged from a hospital in southern California.

EVIDENCE
- Salas et al. (2013) trained volunteers using f/u calls, stressing dietary modification and pharmacologic education significantly reduced 30-day readmissions, decreased NYHA functional status and decreased mortality in the intervention group compared to standard care group.\(^\text{9}\)
- Evangelista et al. (2010)- Systematic Review of health literacy confirmed disease education combined with tailored interventions including f/u calls significantly reduced all cause mortality and hospitalizations.\(^\text{10}\)
- "DIAL, a three year telephone intervention trial including 1,518 randomly assigned patients. The goal was to increase knowledge and to monitor the trends of HF hospitalizations as well as death rates. Decreased death and hospitalizations rates were noted during and three years after the intervention.\(^\text{11}\)

PRACTICE INNOVATION
- HF patients with a primary or secondary diagnosis of HF discharged from TVH within 1-2 days were identified and recruited to participate in the program.
- Participants were called at 24-48 hours, day 10-15, day 20-25, and day 30/31 post-discharge.
- Discharge phone calls were conducted using the Valley Care Heart Failure education call back form.
- Telephone education focused on HF specific key clinical measurements including daily weights, reported HF symptoms, diet modification, and medication compliance.

EVALUATION METHODS/BENCHMARKS
- Readmission rates were obtained 30 days during and 30 days after intervention from October 2014 through January 2015.
- Post project results were obtained from client participation during f/u calls.
- A chart review was conducted to calculate the percentage of 30-day HF readmissions.
- During the non-intervention period (30 days post project) participants’ readmission status for January 2015 was obtained.
- Project goal was a readmission rate less than 20%.

RESULTS
- HF Interventions included 13 participants and had one - 30 day readmission, a 7.7% readmission rate.
- Results were obtained using admission and discharge data from chart reviews.
- Project 30 day readmission rate was 7.7%.
- TVH 30 day readmission rate was 17%.
- Project 60 day readmission rate 7.7%.
- TVH 60 day readmission rate was 24%.
- Minimal cost to complete the project. Expenditures included phone calls and photocopies of the call back form, both were covered by TVH.

CONCLUSIONS/IMPLICATIONS
- Challenging for one RN to call all HF patients within 1-2 days after hospital discharge, phone calls can be time consuming.
- High RN turnover rates in specialty areas at TVH affects hospital staff availability preventing a cost efficient means to sustain this intervention.
- According to the stakeholders, hiring a full time RN Nurse Navigator for $84,000 at TVH to sustain this intervention is not cost efficient; Currently, no penalty is assessed for 30 day readmissions at TVH and the revenue for each HF patient is $16,200.
- Phone calls are an effective and economic way to reduce HF readmissions, improve QOL, and decrease HC cost.\(^\text{12}\)
- Interventions used for this project can be applied to other chronic health conditions.
- APRNs have the opportunity to improve the discharge process for HF patients by promoting a multidisciplinary approach to disease management, ensuring HF specific instructions are understood and initiating a transitional care program.\(^\text{12}\)

TABLES/GRAPHS

REFERENCES
“References Available on Handout”
STRUCTURED TELEPHONE SUPPORT FOR HEART FAILURE PATIENTS

Juanette Clark BSN, RN-BC, DNP FNP/AGNP Student
Dr. Shelley Hawkins PhD, FNP-BC, GNP, FAANP
Dr. Kathy James DNPs, APRN, FAAN
Dr. Heather Adams DNP, MSN, RN, CNS-BC, CMSRN

Background and Significance

- Heart Failure (HF) is currently the number one discharge diagnosis in patient’s aged 65 years and older\(^3,17\)

- Frequent hospitalizations/readmissions have been associated with poor outcomes increased mortality rates\(^10\), and high healthcare (HC) costs\(^9\)

- Studies have shown that nearly 27% of HF patients are readmitted within 30 days of discharge\(^12\)

- Since 2013, the Centers for Medicare and Medicaid Services (CMS) has a readmission goal of less than 20%\(^18\)
Background and Significance

National Data
- HF affects 5.8 million people in the United States; an estimated 23 million people worldwide\textsuperscript{13,18}
- HF totals one million initial admissions and readmissions annually\textsuperscript{10,14}
- National HF readmission rate is 23\%
- The average cost per HF hospital readmissions is $13,000, to $23,000, contributing to the annual $33.7 billion dollar total cost\textsuperscript{15,16,17,18}
- The prevalence and incidence of HF is rising; projected to increase from 5 million in 2012 to 8 million in the year 2030\textsuperscript{2,8}

Local Data
- In 2010 the population in Riverside County was 2.2 million\textsuperscript{15}
- The population is projected to increase to 2.9 million by 2020\textsuperscript{15}
- Riverside County had a 30-day readmission rate of 26.5\%\textsuperscript{15}
- Nearly 20\% of the county’s growth between 2001 and 2010 occurred in the cities of Temecula and Murrieta\textsuperscript{15}
- In 2013 Temecula had over 106,000 residents\textsuperscript{15}
Background and Significance

Hospital in southern California

- Hospital readmission rates from January 2014 to January 2015 averaged 13%

- The project facility is an acute care 140 bed, single patient-room, acute care specialty facility

Background and Significance

- Service lines include: Stroke, Chest Pain/STEMI, Open Heart

- Affiliation with University of California, San Diego: Critical Care Intensivists, Tele-Neurology and Cardiothoracic Surgeons

- The focus is on delivering personalized care in a patient-centered, family sensitive environment

- TVH is part of Universal Health Services (UHS), a for-profit entity
Purpose of the Project

- The purpose of this evidence-based practice (EBP) project was to reduce 30-day readmission rates for HF patients by incorporating a structured telephone support (STS) system, utilizing discharge follow-up (f/u) calls, with adult, HF patients recently discharged from TVH.

PICO Question

Does structured telephone support (STS) through discharge follow-up calls, decrease 30-day HF readmission rates as compared to usual care?
Synopsis of the Evidence

Meta-Analysis

- Data from 18 random controlled trials (RCTs) shows strong evidence of improved quality of life (QOL) and decreased readmission rates using post-discharge support, immediately following discharge\textsuperscript{13}

Synopsis of the Evidence

Systematic Reviews

- Disease-specific education combined with tailored interventions, including f/u calls, significantly reduced mortality and hospitalizations\textsuperscript{6}

- A review of 158 RCTs from the Institute for Healthcare Improvement (IHI) concluded that early post-discharge f/u was an effective intervention to reduce rehospitalization\textsuperscript{9}
Synopsis of the Evidence

Random Controlled Trial

• Trained volunteers used discharge f/u calls, significantly reduced 30-day readmissions, improved the New York Health Associations (NYHA) functional status score, and decreased overall mortality.\(^{13}\)

• “DIAL” was a three year telephone intervention trial that included 1,518 randomly assigned patients. Its goal was to increase knowledge and to monitor the trends of HF hospitalizations as well as death rates. Decreased death and hospitalizations rates were noted during and three years after the intervention.\(^{4}\)

Study Design, Model

![IOWA Model of Evidence-Based Practice and Research](image)
Practice Innovation

• IRB approval from TVH Corporate Office and the University of San Diego

• HF patients with a primary or secondary diagnosis of HF, discharged from TVH within 1-2 days were identified and recruited to participate in the program

• Participants were called a total of 4 times starting at 24-48 hours, day 10-15, day 20-25, and day 30-31 after discharge using the Valley Care HF (VCHS) education call-back form

• F/u calls focused on daily weights, HF symptoms, diet modification, and medication compliance

Evaluation Methods

TVH Readmission Rates

• Readmission rates were obtained 30 days during and 30 days after intervention from October 2014 through January 2015

• Pre and post results obtained from client participation during f/u calls

• Participants’ readmission status for January 2015 was obtained (30 day observational period without f/u intervention)

• HF Interventions focused on 13 participants and had 1 readmission, a (<1%) readmission rate
• F/u calls helped decreased readmission rates by 20%, the goal
VCHS Education Call-Back Form

Results

TVH Heart Failure Readmissions within 30 days
Results

<table>
<thead>
<tr>
<th>Number of HF patients</th>
<th>Number of 30-day Readmissions</th>
<th>Number of 60-day readmissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>HF Participants</td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td>TVH’s current d/c practice</td>
<td>58</td>
<td>10</td>
</tr>
</tbody>
</table>

Cost/Benefit Analysis

Project Cost

1. The cost was minimal using a student volunteer
2. Intervention was cost-effective and provided continuity in care
3. $80 yearly for TVH RN
4. $105,000 a year for APRN
5. $78,000 penalty (if assessed)
6. APRN’s can manage the transition period from hospital to home, billing CMS for the service

TVH HF revenue

1. TVH receives $16,200 per HF patient
2. State estimated reimbursement is $16,500
3. National average is $15,200
4. $2.6 million HF revenue
5. $40,500 for one HF transition program
CONCLUSION

Challenges

• Potentially time consuming

• Hearing or vision-impaired and non English speaking participants

• Patients being discharged to skilled nursing facilities

CONCLUSION

Barriers

• Challenging for one RN to obtain all HF data and intervene with f/u calls in 24-48 hours after discharge

• High RN turnover rate in specialty areas affect hospital staffing and staff availability
CONCLUSION

Advantages

- Cost-effective
- An evidence-based intervention that can reduce readmissions and lower health care cost
- Potentially increase an organization’s revenue

NURSING IMPLICATIONS

- Nurses and other practitioners have the opportunity to improve the discharge (d/c) process for HF patients within their organization by ensuring disease specific d/c instructions are understood and some form of transitional care program is initiated

- Advanced practice nurses (APRN’s) possess leadership skills and play an integral role in providing superior care to patients. Comprehensive d/c planning plus d/c support may reduce readmission rates and improve health outcomes by utilizing a multisystem approach with other ancillary groups are also effective

- Specialty APRN’s such as AGNP’s have a multidimensional knowledge base in theory dissemination, clinical practice and health policy awareness
References


