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Reducing Re-hospitalizations of Patients with Heart Failure at a Skilled Nursing Facility

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University of Arkansas: NURS 6244–DNP Clinical

May 5, 2019

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Abstract

The purpose of this project was to introduce the quality improvement (QI) process to reduce re-hospitalization rates in a skilled nursing facility (SNF) in Stratford, Connecticut for patients having a diagnosis of heart failure (HF). After reviewing the data from the nursing facility for re-hospitalization rates over a three-month period, it was discovered that 22% of patients at the SNF were re-hospitalized within 30 days. Of this population of patients, 22.9% had a diagnosis or complication of HF, which is associated with the highest re-hospitalization rates. This QI project focused on HF education customized towards nursing and nursing assistant staff in order to reduce rates of heart-failure-associated re-hospitalization. The education sessions included ways to identify, prevent, and manage HF. Analysis revealed the rate of completed daily weights for patients with HF increased to 54%, the readmission rate of patients in the HF cohort reduced by 1.5%.

Keywords: Heart Failure, re-hospitalizations, skilled nursing facilities, quality improvement

Background and Significance

A skilled nursing facility (SNF) provides patients with skilled nursing care along with, but not limited to, other services such as rehabilitation, therapies, medication, and medical supplies (Medicare, nd). When patients are sent back to the hospital, also known as re-hospitalization, this can cause facilities to lose revenue (Medicare, nd). A SNF's high re-hospitalization rate may also affect relationships with nearby hospitals that are referral sources for the SNF (Jacobsen et al., 2017).

Re-hospitalizations cost the federal government approximately \$15 billion annually and add additional health risks to patients (Unruh, Trivedi, Grabowski, & Mor, 2013). The Centers for Medicare and Medicaid Services (CMS) in 2009 made efforts to reduce unplanned hospital readmissions by initiating public reporting of readmission rates; in 2012 the Affordable Care Act (ACA) made further efforts to reduce readmissions by financially penalizing hospitals (McHugh et al., 2017). With 20% of Medicare-financed hospitalized patients being discharged to SNFs, these patients become at a higher risk of being re-hospitalized (MedPAC, 2015; McHugh et al., 2017). When re-hospitalization rates were reviewed to determine differences in risk-adjusted re-hospitalizations in SNFs, it was discovered that SNFs having low re-hospitalization rates reduce a patient's likelihood for re-hospitalization (Rahman, Grabowski, Mor, & Norton, 2016).

Beginning in October 2018, Medicare began to impose penalties or reward bonuses to nursing homes based on re-admission rates (Carnahan, Unroe, & Torke, 2016; Rosner, 2018; Medicare, nd; MedPAC, 2015). Of the 224 facilities in the state of Connecticut, 168 were issued penalties, Lord Chamberlain Manor Nursing and Rehabilitation Center, a SNF located in Stratford, was amongst the 38 that faced the largest penalties, with a 1.98 percent reduction in reimbursements (Rosner, 2018). The national average of SNF stays resulting in re-

REDUCING RE-HOSPITALIZATIONS OF PATIENTS WITH HEART FAILURE AT A SKILLED NURSING FACILITY hospitalization within 30-days is 23.5%, with a range of approximately 12 to 42% (Smith et al., 2015). A goal of Lord Chamberlain Manor is to reduce its 30-day re-hospitalization rate.

When obtaining the patient's perspective on whether readmissions from SNFs to hospitals were preventable, one study found 34% of consumers perceiving their re-hospitalization to be preventable (Jacobsen et al., 2017). Interviewed patients that have been re-hospitalized claimed the causes of readmission were related to quality issues and potential reduction of readmission rates may improve patient satisfaction (Jacobsen et al., 2017). The most reported quality issues were inadequate SNF staff treatment/responsiveness, improper medication management, premature hospital discharge, and poor hospital discharge planning (Jacobsen et al., 2017).

In an attempt to aid Lord Chamberlain in achieving its goal of decreasing its number of 30-days re-hospitalization rates, recent data were reviewed and SNF staff were interviewed to identify potential or current concerns. It was discovered that heart failure (HF) is a current contributor to why the majority of patients return to the hospital at the Lord Chamberlain Manor SNF (see Figure 1).

Patients may benefit from nursing staff receiving education on HF monitoring and treatments, as high-risk HF patients may benefit from daily weight monitoring (Gudmundsson, Lyngå, Rosenqvist, & Braunschweig, 2016). Patients who are being weighed daily will have more accurate monitoring for weight gain that could be attributed to HF, as patient reporting has been shown to be less precise (Steventon, Chaudhry, Lin, Mattera, & Krumholz, 2017). At Lord Chamberlain it has been discovered after a four month review that an average of 31.84% of patients with heart failure are being weighed daily without a missed day (see Figure 2).

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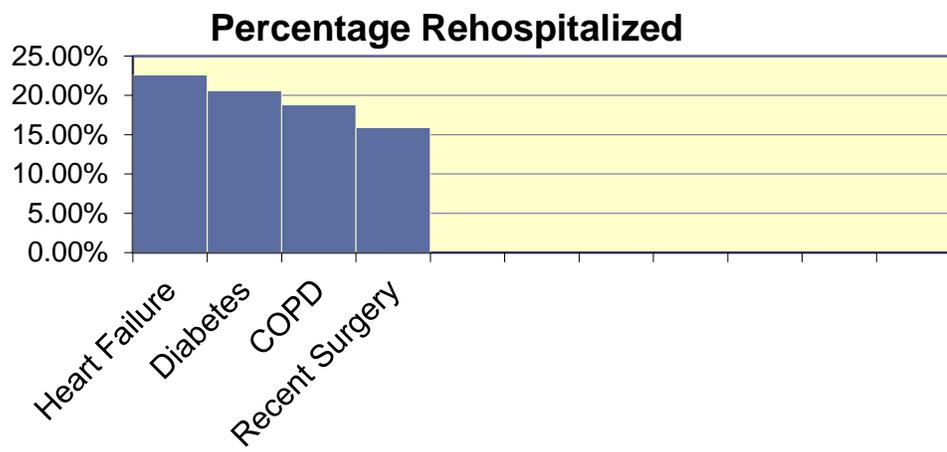


Figure 1: Most frequent causes of rehospitalization for Lord Chamberlain Manor patients from March 2018 to June 2018.

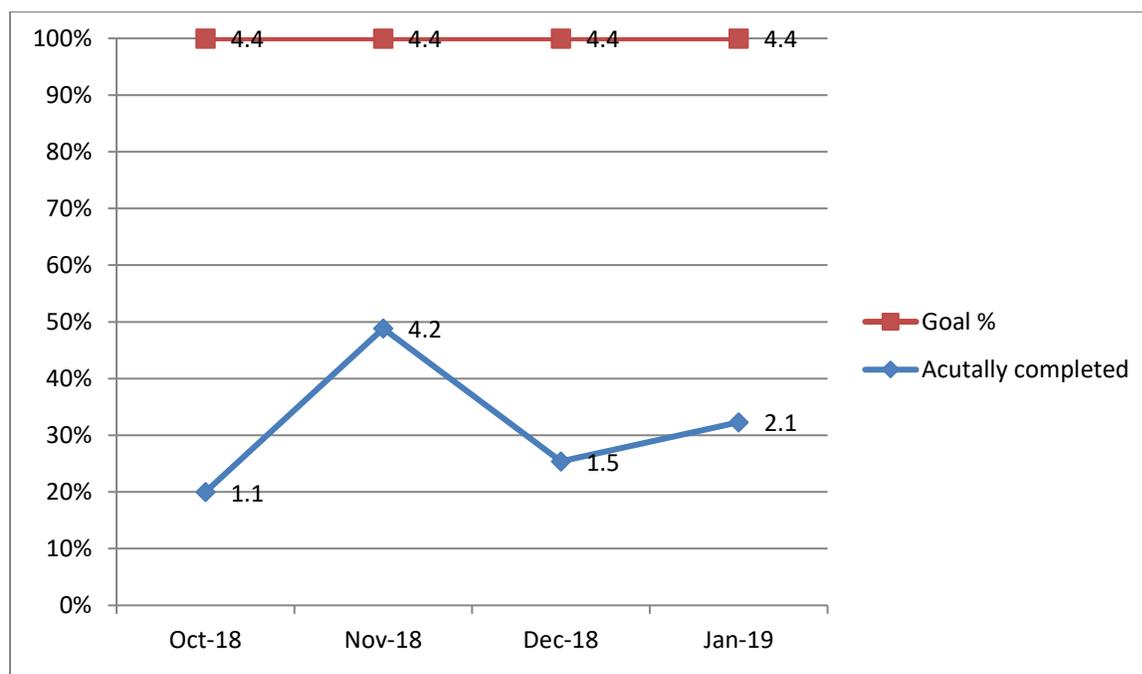


Figure 2: Percentage of HF patients at Lord Chamberlain being weighed daily The average percentage of patients with HF having weights documented daily without a missed day over a four-month period is 31.84%.

Problem Statement

The population currently with the highest 30-day re-hospitalization at Lord Chamberlain is patients diagnosed with HF. The goal at Lord Chamberlain is to reduce its 30-day re-

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hospitalization rates for patients with HF from 22.6% by 5% over a three-month period of time
to help the facility get closer to the national lowest average hospital re-admission rates of 11.9%.

Statement of Purpose

This project's aim was to reduce the number of re-hospitalized patients with HF within a 30-day period of stay at the SNF while also improving the SNF nursing staff's knowledge of HF.

Theoretical Framework

Bandura's social learning theory (1977), later renamed Social Cognitive Theory, is the process of learning through observing other's behaviors, attitudes, and the outcomes of those behaviors. By observing others, one can form ideas on developing new behaviors, thereby using those ideas as a guide for action (Bandura, 1977). Bandura's theory of social learning, commonly associated with modeling learning, utilizes visual demonstrations with students replicating the lesson; students learn by observing then physically repeating the activity taught (Stuart-Hamilton, 2007). The key concepts and principles outlined in Bandura's social learning theory are learning has cognitive and behavior aspects, vicarious reinforcement, observational learning, reinforcement roles, and reciprocal determinism (Bandura, 1977; Bandura, 1963). The types of modeling stimuli are live modeling, verbal instruction, and symbolic (Bandura, 1977; Bandura, 1963).

Bandura (1977) has key concepts that explain social learning theory in terms of necessary conditions needed for effective modeling – these conditions are attention, retention, reproduction, and motivation. Attention refers to the person's exposure to various factors that may increase or decrease the amount of attention, whereas retention is remembering to what the attention was paid (Bandura, 1977; Bandura, 1963). Reproduction is having the ability to recall

REDUCING RE-HOSPITALIZATIONS OF PATIENTS WITH HEART FAILURE AT A SKILLED NURSING FACILITY and reproduce the image, physical capabilities, and self-observation of the reproduction (Bandura, 1977; Bandura, 1963). Lastly, motivation is having an actual good reason as to why the learner would want to imitate, which includes past, promised, and vicarious behaviors or incentives (Bandura, 1977; Bandura, 1963).

Bandura's theory will be applied to the education sessions for nursing staff at the SNF to improve reproduction and retention of the subject matter being taught: HF. In order to gain attention, the topic of HF has been mentioned by nursing management to the staff for the past two months in order to stress the importance of the subject, which has been done by the SNF in preparation of this educational session. The teaching will be performed without distractions in a room provided by the SNF. In order to implement observational learning, a PowerPoint was created as well as printed paper handouts of the materials being taught. The education will be reinforced visually and verbally with an explanation of what heart failure is, how daily weights are important, and how not monitoring may affect patient outcomes. A symbolic model will be used by discussing a patient scenario, which will include identification of a weight change in a patient having a diagnosis of HF. A live model instruction will also be conducted, with demonstration of the appropriate way to weigh a patient and directions to weigh the patient at the same time daily.

To reinforce the education in order to lead to changes in behavior, the staff will be informed of the benefits patients will have by identifying signs and symptoms of a HF exacerbation early and will be informed of improved daily weight data when improvement is achieved. As learning may not always lead to change, other than motivation, punishment can play an important role, but this will be completed by the SNF's nursing management if daily

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weight data appears to be stagnant or declining. In order to assess learning regarding the HF topic, a pre- and post-test will be conducted to monitor retention of information.

Project Description

The proposed plan to reduce re-hospitalization rates of patients with HF by 5% includes the creation and implementation of HF educational sessions geared towards nursing staff and certified nursing assistants (CNA). This project will begin in December of 2018, starting with meetings with the SNF management and nursing staff to create a schedule of educational sessions designed to provide staff with essential information about HF in general, and specific training in monitoring the condition of HF patient. The educational schedule will be at set time slots for a nurse practitioner to provide customized educational lessons to nursing and nursing staff about HF. Educational sessions will be scheduled at varying dates and times to allow access to staff that work varying shifts throughout the week. Prior to creating the educational lessons, pre- tests will be handed out to the staff to rate understanding of HF; the pre-test is included in Appendix A.

Literature Review

The University of Arkansas Library, PubMed, and Google Scholar online databases were searched using the following key words: “heart failure,” “skilled nursing facility,” “staff education,” “readmission,” and “daily weights.” Articles with on-line access were included for review. Scholarly, peer-reviewed articles with on-line access published in the nine-year period from 2011 through 2019 were chosen for review. Inclusion criteria were: articles in medicine, nursing, HF topics, and articles including management of HF and reducing re-hospitalization rates.

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The searches yielded 102 articles that covered a broad range of HF topics, including management, decreasing re-hospitalizations, and utilization of staff education.

Keywords: “heart failure”, “readmission”, “daily weights”, and “skilled nursing facilities”.

It is important to review HF in relation to hospital admissions, as HF is one of the most common diagnoses and indications for hospitalization among adults in the United States (Pang, Komajda, & Gheorghiade, 2010). In a community cohort study, patients given HF as a diagnosis during their hospital stay had a 40% likelihood of being admitted to a SNF and a 50% increased risk of re-hospitalization compared to those not in a SNF (Manemann et al., 2017).

Ayatollahi et al. (2018) found that demographic and cardiovascular risk factors increase patients’ risks for 30-day hospital readmission as well as geriatric syndromes, such as delirium or physical impairments. In a study that analyzed 2,279 consecutively hospitalized geriatric patients with acute HF from November 2012 to October 2014, it was determined that older age was associated with HF readmissions and home healthcare use was associated with lower risks for HF readmission (Ayatollahi et al., 2018).

Patients with HF at high risk of fluid overload may have HF events predicted and prevented with weight monitoring (Gudmundsson et al., 2016; Javaid et al., 2017). Programs such as remotely monitoring HF patient weights daily have been shown to improve the quality of life for patients while also reducing readmission to the hospital (Safdari, Jafarpour, Mokhtaran, & Naderi, 2017; Phelps & Sutton, 2018). HF mobile applications have been found to improve patient self-care of HF; however, self-care may be a limited option in nursing facilities, as patients are most likely dependent for aspects of care (Athilingam, Jenkins, Zumpano, & Labrador, 2018). Nursing at a SNF can implement early HF education to patients, as patient’s

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knowledge about HF, HF symptoms, and self-care improved after patient-education is provided (Gonzaga, 2018).

Education can be helpful to reduce readmission rates, as one pilot study involving nurse practitioner education and education tablet applications found (Breathett et al., 2018). This pilot study in an academic center randomized patients diagnosed with heart failure to two groups: 60 were assigned to the treatment group, which included education with a nurse practitioner plus a tablet application, and 66 to the control group, which was education with a nurse practitioner only (Breathett et al. 2018). Although not statistically significant with a p-value of 0.8, a reduction in 30-day readmission was seen in the treatment group compared with the control group (Breathett et al. 2018). The study was limited to its small sample size; Breathett et al. (2018) discussed the need for additional research with multiple centers to confirm the trend in 30-day readmission reduction.

Further evidence of educational programs reducing patient readmissions is provided by other studies. One QI project at the University of Vermont Medical Center involved delivering of structured, one-hour HF education programs to patients (Hamble, 2017). Results revealed that that education sessions held by a HF clinical nurse specialist significantly reduced the readmission rate from 20.4% to 17.4% (Hamble, 2017). An emergency department (ED) in an urban, 550-bed hospital in Houston, Texas incorporated novel and simple educational strategies towards HF patients in order to markedly reduce readmissions for patients who already have a HF diagnosis (Asthana et al., 2018). Forty-five patients in the intervention group were provided verbal and written education regarding HF etiology, medication side-effects, and ways to reduce exacerbation, along with pre- and post-tests to assess comprehension and retention. Significantly reduced ED revisits and hospital readmission were seen in the intervention group versus the

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control group, which only received ED standard of care treatment without education (Asthana et al., 2018). Though geared towards patients, education is linked with re-hospitalization rate reduction.

Another study found that a HF education program designed for SNF staff in the Greater Cleveland region improved knowledge and confidence in HF management (Boxer et al., 2011). Multi-disciplinary staff in four SNFs were surveyed and evaluated before and after face-to-face or web-based HF training (Boxer et al., 2011). It was expected that a HF management protocol be in place in some form or another, but results from all four SNFs indicated a need for basic education in HF management, as there were no interdisciplinary protocols in place for caring for HF patients (Boxer et al., 2011). The study was limited in part by high staff turnover, and courses were not all completed by assigned staff; however, post-test results did show significant improvement in knowledge and confidence in HF management (Boxer et al., 2011).

In reporting the design of a randomized trial implementing a HF disease management program (DMP) in SNFs, Boxer et al. (2013) reasoned that a “knowledgeable and capable nurse is central” to implementation of a DMP. The trial focused on seven elements considered standard of care for HF patients, including documentation of left ventricle ejection fraction to guide therapy for patients, optimization of medication, and weight and symptom tracking (Boxer et al., 2013). The researchers concluded that the potential for an effective HF DMP in improvement of outcomes for older and frail HF patients could incentivize SNFs to adopt HF DMP protocols and train their own HF nurses (Boxer et al. 2013).

It should not be assumed that nurses working with a patient population are aware of evidence-based practices. A descriptive, quantitative study exploring wound care following

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cardiac surgery in 158 cardiothoracic nurses in eight public and private Irish hospitals found significant knowledge deficits in post-operative wound management (Moran & Byrne, 2018). Though the majority of those surveyed had more than five years of nursing experience, less than half of the nurses correctly identified normal saline as the cleansing agent of choice for post-surgical wound care, and less than 15% knew to remove the initial post-operative wound dressing after 48 hours (Moran & Byrne, 2018). Only a small percentage of the surveyed cardiothoracic nurses reported knowledge updates in the previous two years (Moran & Byrne, 2018). The study was limited by the small sample size and potential self-selection bias, as those more interested wound care were more prone to complete the questionnaires (Moran & Byrne, 2018).

Lastly, when nurses' perceptions were assessed regarding the presence of best practice policies and procedures, one quantitative, descriptive study in South Africa found there to be significant agreement among nurses that best practice standards should be implemented (Chellan & Sibiyi, 2018). Two hundred seventy nurses from four hospitals responded to several evidence-based best practice questionnaires (Chellan & Sibiyi, 2018). The questions in the surveys included a wide range of topics, including resuscitation, patient restraint, hand hygiene, and pressure ulcer prevention (Chellan & Sibiyi, 2018). The study was limited to four hospitals in a district of South Africa; therefore broad generalizations cannot be made (Chellan & Sibiyi, 2018). However, implementation of education and to ensure nursing staff have knowledge of the best practice remains an important goal (Chellan & Sibiyi, 2018).

When nursing staff are well educated on a topic, such as HF, and able to convey their knowledge to patients, one Quasi-experimental study found improvement in patient satisfaction and reduction in 30-day readmission rates (Ghidora, 2017). Twenty-four patients were provided

REDUCING RE-HOSPITALIZATIONS OF PATIENTS WITH HEART FAILURE AT A SKILLED NURSING FACILITY with education during a nurse home visit to reinforce education provided in a University of North Carolina HF clinic (Ghidora, 2017). Patients were given surveys prior to and immediately after the in-home education to assess level of patient satisfaction (Ghidora, 2017). Though limited by small sample size, a significant reduction in the 30-day re-hospitalization rate as well as a significant increase in patient satisfaction were seen after the one-time, in-home education session (Ghidora, 2017).

Bandura's model can be utilized to strengthen educational sessions or may help identify potentially better ways to teach the learner. When applying Bandura's social learning theory to predict health-promoting self-care behaviors in people with pre-diabetes, a quantitative, cross-sectional survey study discovered that these behaviors included self-efficacy, or one's confidence in the ability to perform a behavior, diabetes history, perceptions of empowerment processes, and pre-diabetes knowledge (Chen, Wang, & Hung, 2015). The application of Bandura's social theory signaled the incorporation of environmental and personal factors when selecting pre-diabetes interventions to promote self-care behaviors for the pre-diabetes population studied in Southern Taiwan (Chen, Wang, & Hung, 2015).

By applying Bandura's model with educational teaching, learning outcomes may improve. For example, one study examining art teacher efficacy found that utilization of Bandura's (1997) model of self-efficacy via positive encouragement promoted student engagement (Snyder & Fisk, 2016). The art teachers reported learning about positive encouragement by receiving management skills from other teachers, which correlates with Bandura's model of learning by observation and demonstration (Snyder & Fisk, 2016).

Project Objectives

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The long term objectives for this project are to:

- Reduce re-hospitalization for HF patients

The Short term objectives for this project are to:

- Improve daily weight monitoring for patients with HF by at least 5%.
- Improve nursing staff knowledge about HF as demonstrated by improved post-test data when compared to pre-testing, with at least a 5 percent overall average increase in correct answers.

Congruence with Organization's Needs and/or Plan

The organization has quarterly medical meetings with specific time slotted to discuss data and approaches to reduce hospital re-admissions for patients. In addition to facing Medicare penalties, SNFs can see reduced profits when patients are sent to the hospital. In Connecticut, the median monthly cost for a semi-private room is \$12,167; a SNF must also hold a room for a patient once sent back to the hospital for a period of time without charging the patient a daily fee. (Skilled Nursing Facilities, 2018). The organization has expressed during their quarterly medical meetings that they would like readmission rates reduced, as decreased revenue can occur with increased readmission rates (Rosner, 2018). The SNF has not disclosed any formal documentation regarding their goal to reduce readmissions.

Project Design

Description of Implementation

The project was implemented in two phases. Phase one included one-on-one meetings with the facility nursing director to gather input on facility needs and develop a schedule of educational sessions to create customized educational sessions. Phase two involved

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implementation of the educational sessions. The educational sessions totaled twenty minutes, as twenty minute lecture times produce the most optimal education retention (Mashburn, Meyer, Allen, & Pianta, 2013). The educational sessions were designed utilizing principles of live modeling and included verbal instruction and verbal reinforcement (Bandura, 1977; Bandura, 1963). There was a total of four trainings – one weekday morning, evening, and night training, as well as one weekend training. While working with SNF staff, teaching sessions were scheduled to accommodate the day, evening, night, and weekend shifts. The scheduled sessions included teaching about HF and ways to prevent patients from becoming re-admitted for HF.

The educational sessions focused on strategies identified to prevent HF admissions, such as the importance of daily weight monitoring, risk factors associated with HF complications, and ways to identify signs and symptoms of HF. Power Point presentations and live demonstrations consistent with Bandura's theory of social learning were utilized. The HF lectures outlined the importance of obtaining daily weights, as the daily weight is a known measure for HF monitoring and treatment (Bonow et al., 2005). The content of the HF information reflected standard HF management practices highlighted in National HF Guidelines (Boxer et al., 2011; Hunt et al., 2010; Yancy et al., 2013).

The initial educational lesson developed learning in a cognitive process via lecturing and recalling shared experiences of how to monitor HF patients (Bandura, 1977; Bandura, 1963). Discussion took place about appropriate weight monitoring and reporting changes in patient condition, such as edema (Bandura, 1977; Bandura, 1963). The learner took part in describing potential HF signs and symptoms during case examples, which were based on reciprocal determinism (Bandura, 1977; Bandura, 1963). A live model was utilized by creating fictional case studies for the students/learners to practice assessments. This method connected the

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principle of modeling proper behavior with the learner - expected behaviors in regards to appropriately and accurately weighing patients, documenting daily weights, and reporting abnormal results were reviewed. Verbal instructions during the case studies guided the learners on how to approach appropriate weight monitoring and patient assessments whilst utilizing fictional scenarios.

Lastly, attention, retention, reproduction, and motivation were applied to help reinforce learning. Attention is important, as studies have shown that students with awareness to what is being learned will boost learning outcomes (Postman & Sassenrath, 1961). Awareness was created by the SNF administration requesting staff take part in an educational talk about HF. Visual and verbal descriptions of HF monitoring and HF treatments were handed out to staff to support retention of information and to encourage cognitive rehearsal. (Bandura, 1977; Bandura, 1963). Reproduction of learned acts were supported with random chart reviews of HF patients to monitor whether daily weights are being completed; disclosing of random chart reviews to nursing staff may also present a motivation factor for staff to complete daily weights. Lastly, HF education and an emphasis on patient satisfaction as well as a reduction in readmission rates potentially provided motivation to reinforce reproduction of learned skills

Resources, Risks, Benefits

The resources needed for this project were a laptop with Power Point capabilities, printer/copy machine access for handouts and surveys, a sealed empty box with an opening for anonymous surveys, pens, and a projector. The facility had most of the needed materials and the nurse practitioner supplied hand out materials, a box, and laptop. Scheduling and promotion for educational sessions also required time resources. The risks of this project were poor nursing staff appreciation and low attendance. No risks to the facility or SNF residents were appreciated.

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The potential benefit would be that educational sessions reduce patient re-admissions to the hospital and patients meet goals to discharge home safely.

Timeline

The timeline for this project was a four-month period of time starting December 2018. There were two Power Point educational sessions created, one for nursing staff and another for nursing assistants. During December 2018 to February 2019 educational sessions were scheduled in order to meet the majority of staff on varying shifts. The data of staff response and re-admission rates were reviewed in January 2019.

Tools/Measures Used

The tools that were used to measure progress were the utilization of the electronic health record's (EHR) data collection facility summary, which tracks re-hospitalizations. Nursing staff would input weight daily in patients' EHR; it was assumed that weight was not performed if data was missing.

A pre- and post-test tool was designed to assess knowledge of care for HF patients before and after the educational intervention. Testing questions reflected standard HF management practices highlighted in the National HF Guidelines (Boxer et al., 2011; Hunt et al., 2010; Yancy, et al., 2013). Since 1980, the American College of Cardiology Foundation (ACCF) and American Heart Association (AHA) have reviewed and translated scientific evidence into clinical guidelines and recommendations for healthcare providers and patients (Yancy et al., 2013). The guidelines discuss definitions, diagnosis, and management of HF, including the importance of monitoring volume status at each patient encounter, physical examination findings, and recommendations for non-invasive cardiac monitoring (Yancy et al., 2013). The pre- and post-test questions used a Likert rating scale, with 1 being of least importance and 5

REDUCING RE-HOSPITALIZATIONS OF PATIENTS WITH HEART FAILURE AT A SKILLED NURSING FACILITY being greatest importance. A limitation of this QI project is that a validated testing tool specific to this topic and this audience was not identified.

Method of Analysis for Each Measure in Plan

In order to monitor readmission rates for HF patients, the number of re-hospitalized patients was evaluated internally by the SNF every three months and compared to prior readmission assessments. The data included total re-hospitalizations and filtered to include those having HF as causation for hospitalization.

The objective of improving daily weight monitoring for patients with HF was evaluated by auditing all the patients' charts that had HF. The charts of HF patients were reviewed to observe whether the patients had missing weights before the educational sessions and two weeks after. No other patient data was collected other than to see if a daily weight was missing.

In order to evaluate whether the nursing staff gained knowledge about the HF topic, a survey/test was conducted. Before each educational session, surveys/tests (Appendix A) were handed out to all staff; completed surveys were placed in a sealed box labeled "Pre-Session." The box had an opening cut out for documents to be placed inside. The surveys were later locked in a file cabinet to prevent third party tampering. After the educational session, a post-test was completed by participants and placed in a similar box. The survey/test data was converted into an Excel spread sheet and pre- and post-test answers using the Likert scale were placed into graphs to display changes, if any.

Approvals

The firm endorsement needed before gaining approval from the rehabilitation facility was from the University of Arkansas's Institutional Review Board (IRB). Once IRB approval was obtained, the next needed approval for this project proposal was from Lord Chamberlain Manor

REDUCING RE-HOSPITALIZATIONS OF PATIENTS WITH HEART FAILURE AT A SKILLED NURSING FACILITY nursing and rehabilitation center located at 7003 Main Street Stratford, Connecticut 06614. Lord Chamberlain Manor is a subsidiary company of Ryders Rehabilitation, LLC. The facility has Mrs. Patty Quinn, B.S., LNHA, who is the administrator that authorized approval and signed pertinent documents for this project.

Mutual Agreement Form

After this project proposal was approved by the IRB, a mutual agreement form was requested. The mutual agreement form (Appendix B) was delivered to the Lord Chamberlain Manor administrator for review and signatures prior to beginning the proposed project.

Informed Consent

Prior to beginning the educational sessions for this project to reduce re-hospitalization rates, an informed consent was obtained from Lord Chamberlain Manor. The example of the informed consent is located in Appendix B, which also serves as the mutual agreement form. No informed consents were needed from patients, as no direct interactions with patients took place for the execution of this project. Mutual agreement and informed consent needed to be obtained from the facility to allow for information review and teaching sessions.

Results

Pre-test and Post-test Results

The pool completing the post-test was not the same as the pool taking the pre-test, as a total of 25 SNF nursing staff completed the pre-test and a total of 23 completed the post-test. Results may thus be skewed and standard deviations have been calculated to display range variation due to the sample size changes. The pre-test took place prior to an educational lecture on HF prior to each SNF shift rotation which includes night, day, evening, and weekend shifts.

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The participants were all staff of Lord Chamberlain Manor and worked at the SNF as a registered nurse (RN), licensed practical nurse (LPN) or certified nursing assistant (CNA). Out of a total of 39 nursing staff members, sixty-four percent of staff completed the training program, which included 10 LPNs, six RNs, and nine CNAs. The training sessions totaled 20 minutes in length.

The questions on the pre-test and post-test are identical, with the first three questions pertaining to personal reflection on the learner's perception of their own HF knowledge and SNF performance. Questions four through ten pertain to defining, diagnosing, monitoring, and evaluating HF. Questions 1-3 were scored on a Likert scale from one, being little interest or understanding, to 5, being great interest or understanding. Questions 4-10 were given a number value for data collection. A correct answer was given a 1 value and an incorrect answer was given the value of 2 for questions 4 to 10. Figure 4 to figure 7 display the pre-test and post-test data.

Questions 1-3 on the pre- and post-test indicate self-reported knowledge about HF. The rating system used was a number scale of 1 to 5, with 1 being of least importance and 5 being greatest importance. Question 1 (Q1) has the learner rate the importance of daily weights for HF patients. All participants responded with an answer of 5. Question 2 (Q2) allows the learner to rate their current HF knowledge. Q2 has an average is 4.21 and standard deviation is 0.73, meaning most participants rate their current HF knowledge as being above average. Question 3 (Q3) allows the learner to rate their organization's frequency of HF re-admissions. Q3 has an average is 3.78 and standard deviation is 1.08, meaning there is a varied awareness of the SNF's HF re-admission rates. The SNF may be able to investigate and potentially address whether this inconsistent awareness among SNF staff is linked with elevated HF re-admission rates. This varied awareness may be related to a lack of nursing participation in the SNF's quarterly data

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review. The nursing director is privy to the data shared at the meetings; a review of the processes for sharing data with staff might yield helpful information about the need for more informed staff. Lastly, this inconsistency with staff awareness may be related to the differing educational levels among staff, which was a limitation of the study.

Question 4 (Q4) to question 10 (Q10) are specific HF questions with correct or incorrect answers. When grading the pre-test and post-test to measure improvement, questions 4-10 were used because questions 4-10 do not include opinion. The pre-test and post-test average score was calculated by taking the mean of each correct answer and calculating the correct answer percentage of the seven questions. The pre-test average correct score was 64% and the post-test average correct score was slightly over 72%. There was an improvement in ability to define HF; however, the ability to identify signs and symptoms of HF were mixed (Figures 5-7). There was a slight increase in the ability to identify different types of HF and a marked increase in the learner's ability to identify whom to inform of suspected HF. There was a slight decrease in the learner's ability to identify symptoms of HF and to identify how HF is diagnosed, respectively Q8 and Q9. This result may be skewed as not all post-tests were returned.

Heart Failure Cohort Re-Hospitalizations

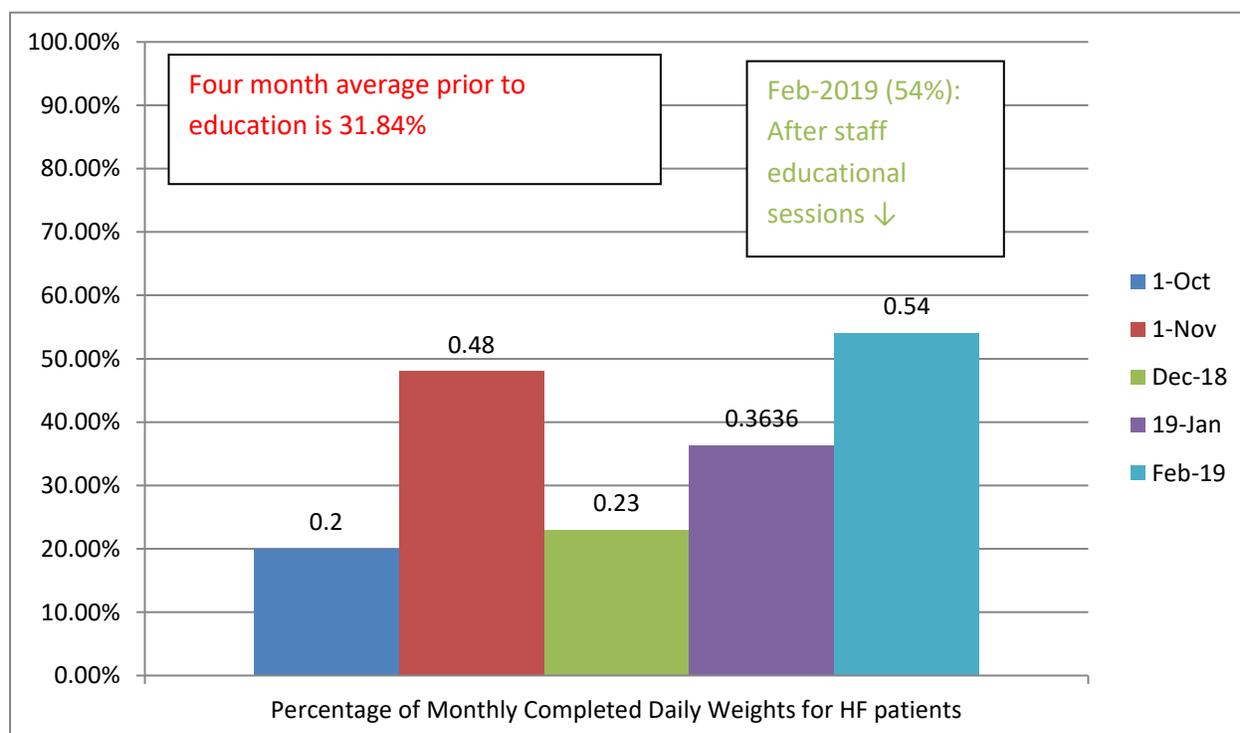
Prior to initiating education about the topic of HF, it was found that over a three-month time period, 22.9% of patients re-hospitalized had HF or complications associated with HF. Re-admission for the SNF during the month of December of 2018 was reported at 10% and for January 2019 it was 13.4%. The SNF's reported rate of HF-associated re-admissions was 21.4% for December 2018 to January 2019, which is a 1.5% lower than the March 2018 to June 2018 data (Figure 8).

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Heart Failure Daily Weight monitoring Results

Charts of patients with a known diagnosis of HF were reviewed starting in October, 2018 to February, 2019 to monitor if daily weights are being accomplished. Prior to nursing staff education on the topic of HF, the data revealed a four month average of 31.84% of HF patients having daily weights without missed days being weighed. After the educational sessions, the month of February of 2019 yielded a 54% completion of daily weights for HF patients without a missed day. Figure 3 demonstrates the daily weight monitoring data.

Figure 3: A graph displaying the percentage of completed daily weights for patients at the SNF with a HF diagnosis.



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Figure 4: Pretest and posttest data for questions 1 to 3.

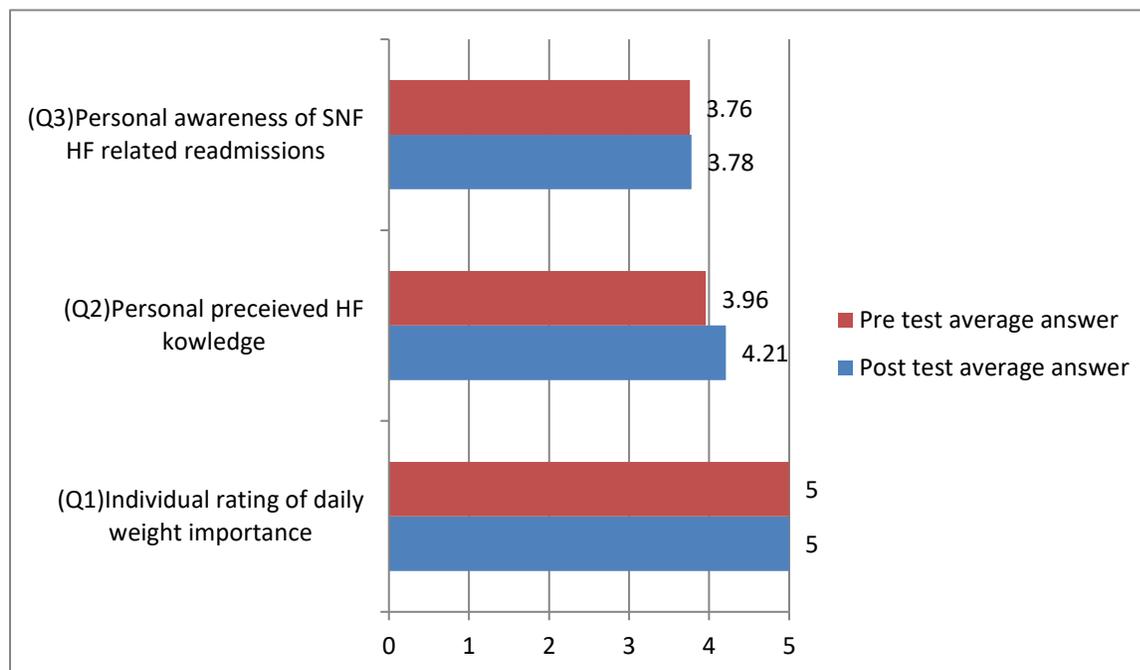
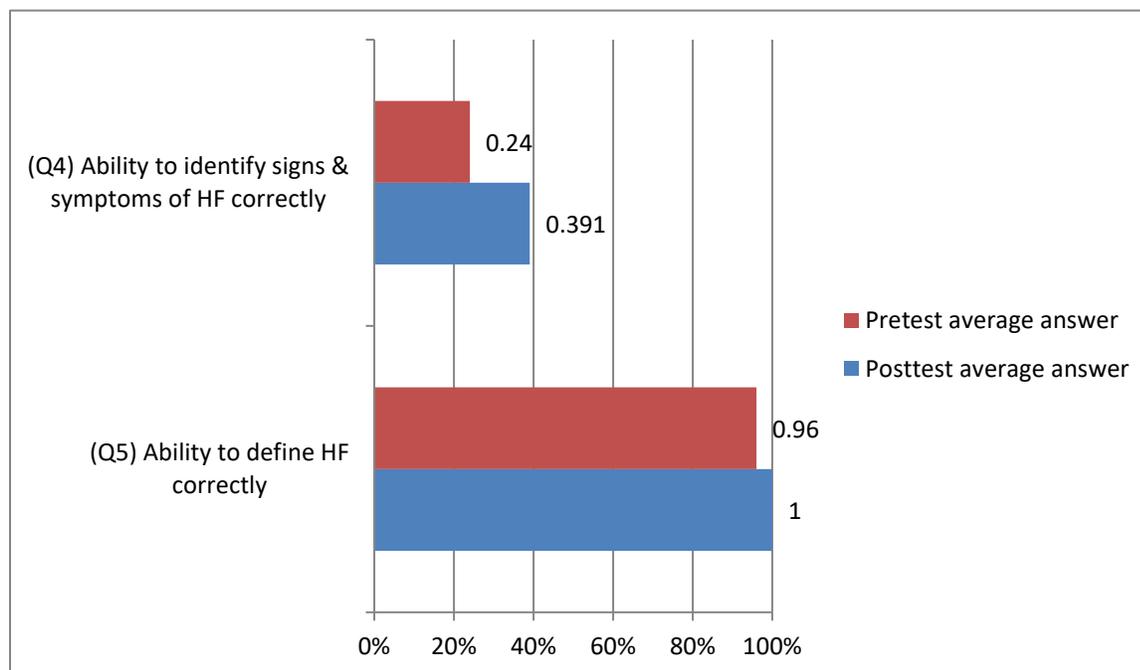


Figure 5: Pretest and posttest data for questions 4 and 5.



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Figure 6: Pretest and posttest data for question 6.

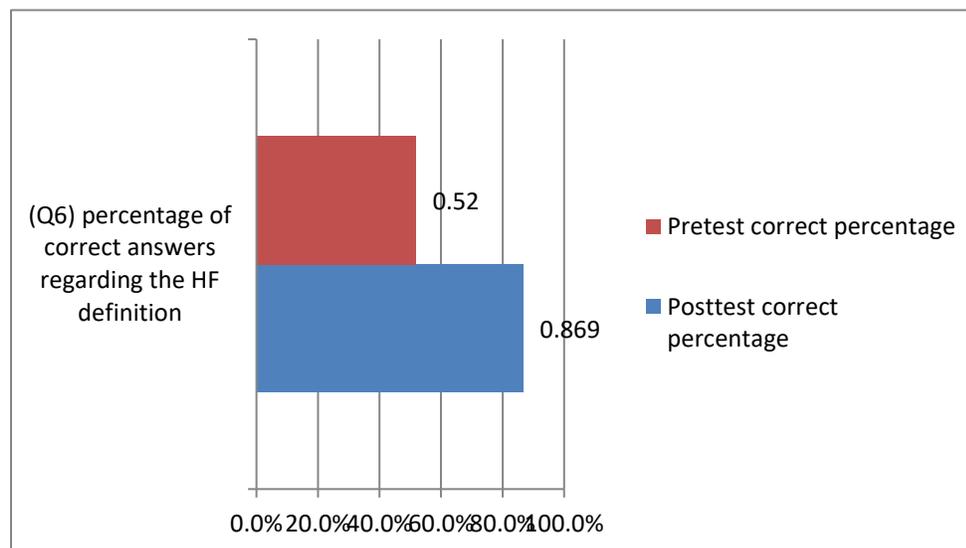


Figure 7: Pre-test and post-test data for questions 7 to 10.

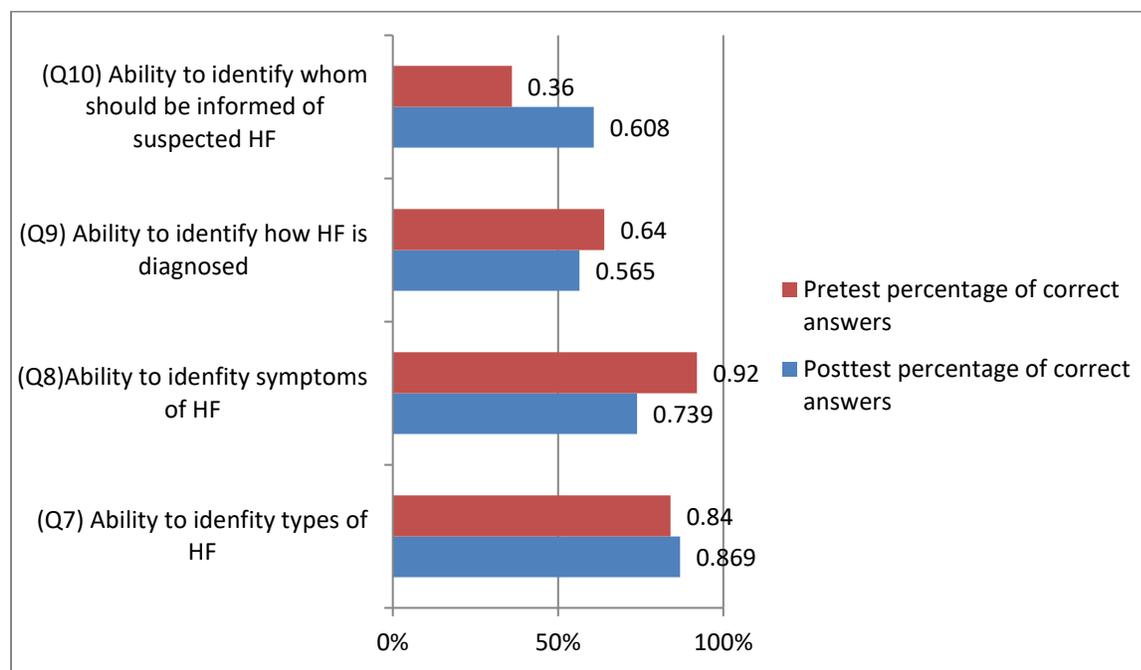
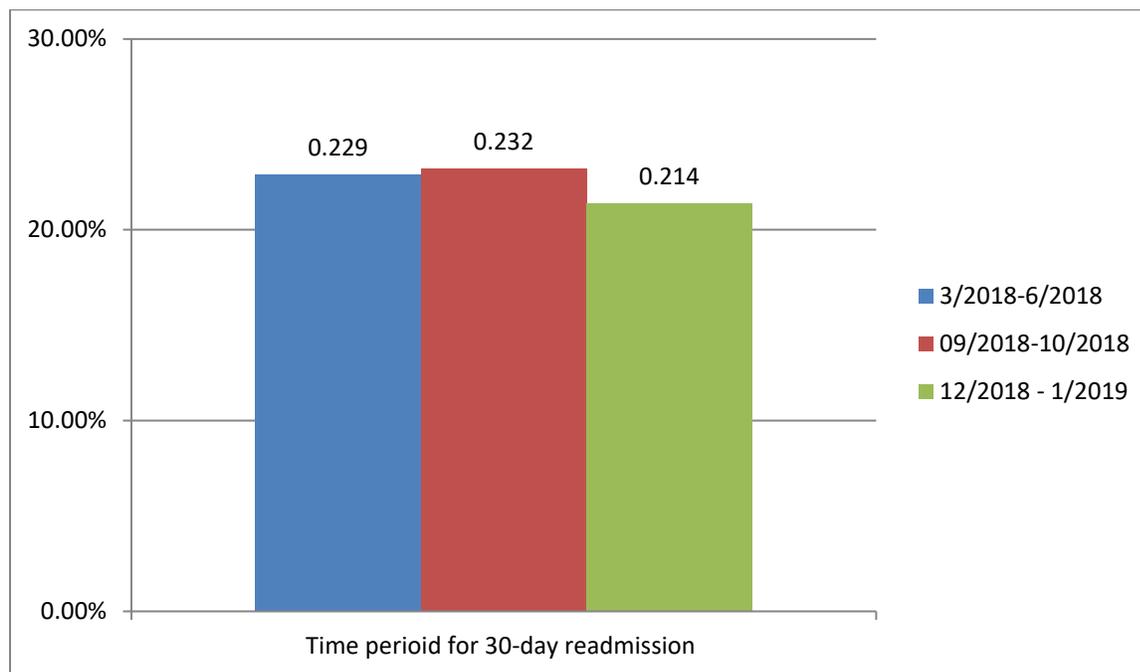


Figure 8: Re-admissions associated with HF cohort.



Achievement of objectives

The short term objectives for this quality improvement (QI) project were to improve the percentage of patients with heart failure to have daily weight monitoring by at least 5% and to improve staff knowledge on the topic of HF. In regards to HF weight monitoring, the mean daily weights being completed for HF patients over four months was 31.84%; the mean increased to 54% after the educational lectures. The completed daily weights for HF patients rose over 22% above the recent four month mean, which is over 17% above the target goal of 5%.

In regards to improved nursing staff knowledge about HF, the educational intervention was intended to demonstrate at least a 5% overall average percentage increase in correct answers. Questions one to three are reflection and screening questions, and not intended to rate retained knowledge. When comparing the correct answers for questions four to seven, the

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average pre-test correct answers are 64% compared to the post-test average of 72.01%. This result exceeded the goal of a 5% increase by 3%. There was a diminution in the ability to identify HF symptoms and how HF is diagnosed. There were also more pre-tests completed than post-tests. Not all those who participated in the educational lectures completed the post-tests, which may have skewed data. This discrepancy may be related to staff entering the lectures late, and may indicate that nursing staff need more designated time for educational lectures. Therefore, attention, a key principle of Bandura's social learning theory, may have been lost by some due to reduced exposure to the educational session. Lastly, the tool was not developed using accepted instrument development strategies and therefore lacked content validity.

The HF cohort of patients being readmitted to the hospital within 30 days of SNF admission did decline while this QI project was being conducted. There was a 1.5% decrease during the December 2018 to January 2019 time period when compared to the March to June 2018 data. The data after February 2019 would better reflect improvement associated with staff HF educational sessions.

Facilitators and Barriers

Educational Sessions and testing

Facilitators for this project have been the nursing management at the SNF, who actively advertised and participated in educational session. Some barriers associated with the educational session and testing includes some nursing staff not appropriately following directions. Some staff came to the education and completed a pre-test, but left early and did not complete a post-test, as the posttest was distributed after the session was over. Some staff where observed participating in the educational session after it had begun.

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Daily Weight Monitoring

A facilitator of daily weight monitoring was the candidness of staff being willing to share hindrances and opinions as to why weights are not always being completed. The biggest barrier to daily weights not always being completed was reported by staff to be patient refusals and time constraints. The staff were educated on offering solutions to patient weight refusals, such as educating patients on the importance of weight monitoring and trying to change the time patients are weighed. Changing the time a patient is weighed may reduce frustrations patients have on waking early to be weighed and may allow for more time for the task to be completed by staff. If the nursing staffs continue to stress HF weight monitoring significance and offer supplementary opportunities to weigh patients, this may change the SNF's ethos and behavior to have maintainable improvements for HF patients completing daily weights.

Heart Failure Re-admission Cohort

The facilitator for this aspect of the project would be the SNF staff willingness to receive education and staff involvement. The barrier to improvement would be this QI project timeframe, as there is not enough time allotted to continue to monitor and trend re-admission rates.

Consequences

No identifiable negative outcomes have been associated with this QI project.

Recommendations

Recommendations & Ongoing activities

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When reviewing the post-test data, it was identified on Q8 that there was a decline in correct answers regarding the learner's ability to identify signs and symptoms of HF. This data was conveyed to the SNF nursing director and advised that additional education on the topic of symptoms and signs of HF is needed. In the future, allowing the learner to disclose his or her educational level and highest degree maybe useful to determine educational gaps and needs for the various types of staff.

This QI project was completed with the creation of a non-validated pre and post-test, as a specific test was not used. In the future a validated test may yield more accurate data. The face validity, or subjective assessment, of the pre- and post-test was judged by the SNF nursing administration prior to introduction. However, face validity is the weakest form of validity; therefore, a panel of experts could be fashioned to evaluate and measure the content validity of pre- and post-tests used in future studies (Lawshe, 1975).

Contributions to Personal Goals

When starting this QI project, the monthly completed daily weights for HF patients was 31.84%. This QI project involved implementation of SNF nursing staff education sessions, administration of pre-tests and post-tests, and in numerous meetings with SNF staff and management regarding the topic of HF. As a result of these efforts, the rate of completed daily weights for patients with HF increased to 54%, the readmission rate of patients in the HF cohort reduced by 1.5%, and there was an overall improved average in post-testing regarding HF knowledge by 8%. Goals have been achieved but it is unclear if the implemented educational sessions created sustainable improvement. It has been advised to the SNF that continued data monitoring and nursing staff education in the form of topical lectures take place to continue to

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reduce HF readmissions and improve health outcomes and patient satisfaction. The SNF may also incorporate a flagging system in the EHR to alert nursing staff of when weights are not completed.

References

Asthana, V., Sundararajan, M., Ackah, R. L., Karun, V., Misra, A., Pritchett, A, Peacock, W. F.

(2018). Heart failure education in the emergency department markedly reduces readmissions in un- and under-insured patients. *American Journal of Emergency Medicine*, 36(12), 2166-2171. doi:10.1016/j.ajem.2018.03.057

Athilingam, P., Jenkins, B. A., Zumpano, H., & Labrador, M. A. (2018). Mobile technology to improve heart failure outcomes: A proof of concept paper. *Applied Nursing Research*, 39, 26-33. doi:10.1016/j.apnr.2017.10.018

Ayatollahi, Y., Liu, X., Namazi, A., Jaradat, M., Yamashita, T., Shen, J. J., Yoo, J. W. (2018). Early readmission risk identification for hospitalized older adults with decompensated heart failure. *Research in Gerontological Nursing*, 11(4), 190-197. doi:10.3928/19404921-20180322-01

Bandura, A (1963). *Social learning and personality development*. New York. Holt, Rinehart, and Winston.

Bandura, A (1977 & 1997). *Social Learning Theory*. Oxford, England: Prentice-Hall.

Bonow, R.O., Bennett, S., Casey, D.E, Jr., Ganiats, T. G., Hlatky, M. A., Konstam, M. A...

Spertus, J. A. (2005). ACC/AHA Clinical Performance Measures for Adults with Chronic Heart Failure: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Heart Failure Clinical Performance Measures): endorsed by the Heart Failure Society of America. *Circulation*. 112(12), 1853–1887.

REDUCING RE-HOSPITALIZATIONS OF PATIENTS WITH HEART FAILURE AT A SKILLED NURSING FACILITY

Boxer, R. S., Dolansky, M. A., Bodnar, C. A., Singer, M. E., Albert, J. M., Gravenstein, S.

(2013). A randomized trial of heart failure disease management in skilled nursing facilities: design and rationale. *Journal of the American Medical Directors Association*, 14(9), 710, e5-11.

Boxer, R. S., Dolansky, M. A., Frantz, M. A., Prosser, R., Hitch, J. A., & Piña, I. L. (2011). The Bridge Project: improving heart failure care in skilled nursing facilities. *Journal of the American Medical Directors Association*, 13(1), 83.e1–83.e837.

doi:10.1016/j.jamda.2011.01.005

Breathett, K., Maffett, S., Foraker, R. E., Sturdivant, R., Moon, K., Hasan, A. Abraham, W. T.

(2018). Pilot randomized controlled trial to reduce readmission for heart failure using novel tablet and nurse practitioner education. *The American Journal of Medicine*, 131(8), 974-978. doi:10.1016/j.amjmed.2018.02.017

Carnahan, J. L., Unroe, K. T., & Torke, A. M. (2016). Hospital readmission penalties: Coming soon to a nursing home near you. *Journal of the American Geriatrics Society*, 64(3), 614-618. doi:10.1111/jgs.14021

Chellan, J., & Sibiya, M. N. (2018). Perceptions of nursing staff regarding the existence of best practice standards in selected private hospitals in eThekweni district, South Africa.

International Journal of Africa Nursing Sciences, 9, 14-22.

doi:10.1016/j.ijans.2018.06.001

Chen, M., Wang, R., & Hung, S. (2015). Predicting health-promoting self-care behaviors in people with pre-diabetes by applying bandura social learning theory. *Applied Nursing Research*, 28(4), 299-304. doi:10.1016/j.apnr.2015.01.001

REDUCING RE-HOSPITALIZATIONS OF PATIENTS WITH HEART FAILURE AT A SKILLED NURSING FACILITY

- Ghidora, E. (2017). *Nurse home visits with education: An effort to reduce 30-day readmission rates and improve patient satisfaction scores*. (Doctoral dissertation, The University of North Carolina at Chapel Hill).
- Gonzaga, M. C. V. (2018). Enhanced patient-centered educational program for HF self-care management in sub-acute settings. *Applied Nursing Research, 42*, 22-34.
doi:10.1016/j.apnr.2018.03.010
- Gudmundsson, K., Lyngå, P., Rosenqvist, M., & Braunschweig, F. (2016). Monitoring of daily body weight and intrathoracic impedance in heart failure patients with a high risk of volume overload decompensation. *Clinical Cardiology, 39*(8), 446-452.
doi:10.1002/clc.22547
- Hamble, R. (2017). 5 does a structured education program reduce 30-day heart failure readmissions? *Heart & Lung: The Journal of Acute and Critical Care, 46*(3), 213-213.
Abstract retrieve from American Association of Heart Failure Nurses Abstracts
doi:10.1016/j.hrtlng.2017.04.017
- Hunt, S., A., Abraham, W., T., Chin, M., H., Feldman, A., M., Francis, G., Ganiats, T... Yancy, C. (2010) 2009 focused update incorporated into the ACC/AHA 2005 Guidelines for the Diagnosis and Management of Heart Failure in Adults: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines: developed in collaboration with the International Society for Heart and Lung Transplantation. *Circulation*. 2010 March 30; 121 (12):e258.
- Jacobsen, M. L., Schnelle, J. F., Saraf, A. A., Long, E. A., Vasilevskis, E. E., Kripalani, S., & Simmons, S. F. (2017). Preventability of hospital readmissions from skilled nursing facilities: A consumer perspective. *The Gerontologist, 57*(6), 1123.
doi:10.1093/geront/gnw132

REDUCING RE-HOSPITALIZATIONS OF PATIENTS WITH HEART FAILURE AT A SKILLED NURSING FACILITY

Javaid, M. R., Baca, G., Dyllal, L., Maka, R., Dillaway, J., Chineah, M., Akhtar, J. (2017). 13

Keeping up the beat: A quality improvement project on heart failure monitoring & management. *Heart*, 103(Suppl 5), A8-A10. doi:10.1136/heartjnl-2017-311726.13

Lawshe, C.H. (1975). A quantitative approach to content validity. *Personnel Psychology*, 28, 563–575. doi:10.1111/j.1744-6570.1975.tb01393.x

Mashburn, A., Meyer, P., Allen, J., Pianta, R. (2013). The Effect of Observation Length and Presentation Order on the Reliability and Validity of an Observational Measure of Teaching Quality: Educational and Psychological Measurement. Sage Journals. <https://doi.org/10.1177/0013164413515882>

Manemann, S. M., Chamberlain, A. M., Boyd, C. M., Weston, S. A., Killian, J., Leibson, C. L., Roger, V. L. (2017). Skilled nursing facility use and hospitalizations in heart failure. *Mayo Clinic Proceedings*, 92(4), 490-499. doi:10.1016/j.mayocp.2017.01.014

McHugh, J. P., Foster, A., Mor, V., Shield, R. R., Trivedi, A. N., Wetle, T., Tyler, D. A. (2017). Reducing hospital readmissions through preferred networks of skilled nursing facilities. *Health Affairs*, 36(9), 1591-1598. doi:10.1377/hlthaff.2017.0211

Medicare. (nd). Your Medicare Coverage: Skilled nursing facility (SNF) care. U.S. Centers for Medicare & Medicaid Services. Retrieved from:

<https://www.medicare.gov/coverage/skilled-nursing-facility-snf-care>

MedPAC. (2015). Medicare Payment Advisory Commission Report to the congress: Medicare payment policy. Washington, D.C. March, 2017. Chapter 7, Medicare's post-acute care: trends and ways to rationalize payments. Retrieved from: <http://medpac.gov/docs/default-source/reports/chapter-7-medicare-s-post-acute-care-trends-and-ways-to-rationalize-payments-march-2015-report-.pdf?sfvrsn=0>

REDUCING RE-HOSPITALIZATIONS OF PATIENTS WITH HEART FAILURE AT A SKILLED NURSING FACILITY

- Moran, N., & Byrne, G. (2018). Assessing knowledge of wound care among cardiothoracic nurses. *British Journal of Nursing*, 27(15), S33-S42. doi:10.12968/bjon.2018.27.15.S33
- National League for Nursing. (2006). *Excellence in nursing education model*. New York: National League for Nursing
- Pang, P.S., Komajda, M., & Gheorghiade M., (2010). The current and future management of acute heart failure syndromes. *European Heart Journal*. 31(7):784-793
- Phelps, P., & Sutton, K. (2018). Structured telephonic consultation to decrease heart failure readmissions. *MedSurg Nursing*, 27(3), 153-172.
- Postman, L., Sassenrath, J. (1961). The Automatic action of verbal rewards and punishments. *The Journal of General Psychology*. 65 (1): 109-136.
- Rahman, M., Grabowski, D. C., Mor, V., & Norton, E. C. (2016). Is a skilled nursing facility's rehospitalization rate a valid quality measure? *Health Services Research*, 51(6), 2158-2175. doi:10.1111/1475-6773.12603
- Rosner, C., 2018. Nursing homes penalized for hospital readmissions. CT Post. December 5th, 2018. Retrieved from: <https://www.ctpost.com/local/article/Nursing-homes-penalized-for-hospital-readmissions-13445216.php>
- Safdari, R., Jafarpour, M., Mokhtaran, M., & Naderi, N. (2017). Designing and implementation of a heart failure telemonitoring system. *Acta Informatica Medica*, 25(3), 156. doi:10.5455/aim.2017.25.156-162
- Skilled Nursing Facilities. (2018). Senior Care. Nursing Home Costs: Nursing Home Costs by State. Retrieved from: <https://www.skillednursingfacilities.org/resources/nursing-home-costs/>

REDUCING RE-HOSPITALIZATIONS OF PATIENTS WITH HEART FAILURE AT A SKILLED NURSING FACILITY

- Smith, L., West, S., Coots, L., Ingber, M., Reilly, K., Feng, Z... Etlinger, A. (2015). Skilled Nursing Facility Readmission Measure (SNFRM) NQF #2510: All-Cause Risk-Standardized Readmission Measure. RTI International for the Centers for Medicare & Medicaid Services.
- Snyder, S., & Fisk, T. (2016). Applying bandura's model to identifying sources of self-efficacy of teaching artists. *Research in the Schools*, 23(2), 38.
- Steventon, A., Chaudhry, S. I., Lin, Z., Mattera, J. A., & Krumholz, H. M. (2017). Assessing the reliability of self-reported weight for the management of heart failure: Application of fraud detection methods to a randomised trial of telemonitoring. *BMC Medical Informatics and Decision Making*, 17(1), 43. doi:10.1186/s12911-017-0426-4
- Stuart-Hamilton, I. (2007). Dictionary of psychological testing, assessment, and treatment: second edition. Jessica Kingsley Publishers.
- Unruh, M. A., Trivedi, A. N., Grabowski, D. C., & Mor, V. (2013). Does reducing length of stay increase rehospitalization of medicare Fee-for-Service beneficiaries discharged to skilled nursing facilities? *Journal of the American Geriatrics Society*, 61(9), 1443-1448. doi:10.1111/jgs.12411
- Yancy, C. W., Jessup, M., Bozkurt, B., Butler, J., Casey, D. E., Drazner, M. H...Wilkoff, B. L. (2013). 2013 ACCF/AHA guideline for management of heart failure. *Journal of the American College of Cardiology*, 62 (16), e148-239.

Appendix A: Pre and Post-test/survey

Please circle the best answer to each question and place the completed survey in the sealed box. Please do NOT put your name or any identification on this survey. Thank you

1. How would you rate the importance of needing to weigh a patient daily that has a recent medical history of heart failure:
 1. No importance
 2. Little importance
 3. Neutral
 4. Some importance
 5. Great importance

2. How would you rate your current knowledge and understanding of heart failure/congestive heart failure?
 - 1- Little understanding
 - 2- Somewhat understand
 - 3- Neutral
 - 4- Good understanding
 - 5- Great understanding

3. The organization sends patients to the hospital for heart failure or heart failure related concerns frequently.
 - 1- strongly disagree
 - 2- somewhat disagree
 - 3- neutral/no opinion
 - 4- somewhat agree
 - 5- strongly agree

4. Circle all the signs and/or symptoms of a congestive heart failure episode below.
 - 1- Vision changes
 - 2- Dry cough
 - 3- Swollen ankles
 - 4- Rapid or irregular heartbeats
 - 5- Confusion
 - 6- Weakness
 - 7- Blood in patients urine

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5. Heart failure is:
 1. A condition in which the heart cannot pump enough blood to meet the body's needs
 2. A heart attack
 3. A medical condition that causes the heart to stop beating
 4. A condition that causes ongoing chest pain

6. True or false: Congestive heart failure and heart failure are the same thing
 - a. True
 - b. False

7. Which is not one of the types of heart failure?
 - a. Right sided heart failure
 - b. Aortic heart failure
 - c. Congestive heart failure
 - d. Left sided heart failure

8. All are symptoms of heart failure except:
 - a. Raised jugular venous pressure
 - b. Pulmonary crackles
 - c. Pinkness of the facial skin
 - d. Peripheral edema

9. Which test is not likely to be ordered/completed to diagnose heart failure?
 - a. Chest xray
 - b. Physical exam
 - c. Echocardiography
 - d. Electroencephalogram

10. Whom should I inform if my patient has at least a 2lb weight gain compared to patient's admission weight? Circle all that apply.
 1. The patient's unit nurse
 2. Unit nurse manager
 3. Administrator
 4. Physical therapist
 5. Medical provider (MD, DO, NP)
 6. Patient's cardiologist

Appendix BMutual Agreement/Informed Consent Form

This agreement is made on ___/___/___

Parties:

Louis D’Onofrio Jr., FNP-C – University of Arkansas DNP student.

and

(Name)_____ (Representing Lord Chamberlain Manor/nursing and rehabilitation center).

This document serves as a mutual agreement between the above party(s) regarding Louis D’Onofrio’s DNP student project being completed at Lord Chamberlain manor located at 7003 Main Street of Stratford, CT 06614 for the date range of October 1, 2018 to May 15, 2019. This signed document is to serve as an agreement that Lord Chamberlain Manor will allow Louis D’Onofrio, FNP-C to review patient population data within HIPPA laws and to allow Mr. D’Onofrio to provide educational lectures to Lord Chamberlain staff while collecting survey(s), if necessary. Lord Chamberlain and Louis D’Onofrio are in agreement that the educational sessions/lectures are to be completed for the mutual goal to improve patient health/population health by informing staff about congestive heart failure (CHF).

This document is also serving as informed consent that Lord Chamberlain Manor will allow and grant permission for Louis D’Onofrio to complete his DNP research and project at Lord Chamberlain and Louis D’Onofrio will request approval by the administration prior to each session. Lord Chamberlain has the right to review all papers, handouts, power-points, or any educational material prior to each session and may offer input and suggestions. This agreement may be terminated by either party at any time with 30-day written notification.

Louis D’Onofrio Jr., FNP-C – University of Arkansas DNP student

Signature:_____Date(___/___/___)

(Printed Name)_____

(Representing Lord Chamberlain Manor/nursing and rehabilitation center)

Signature:_____Date(___/___/___)