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Reducing Hospital Readmission Rate in CHF Patients Through Early Individualized Patient Discharge Education

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**Reducing Hospital Readmission Rate in CHF Patients Through Early Effective
Individualized Education to CHF Patients**

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NURS 653: CNL Internship

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Abstract

The term congestive heart failure (CHF) is a chronic condition that occurs in a person when the heart stops doing its normal activity of pumping blood to the rest of the body for the body. Heart failure normally occurs when the heart can no longer pump (systolic) or fills (diastolic) pressure adequately to the body. Because heart failure is one of the leading causes of death in the United States this project was conducted on one of the Northern California San Francisco Bay- Area hospitals to assess patients understanding and knowledge on the presenting signs and symptoms of heart failure and what to do in an event of an emergency. Heart failure can be caused by many factors including genetics and others like coronary artery disease also known as atherosclerosis or hardening of the arteries, heart attack (HF-rEF when it gets bigger, or HF-PEF when the heart is stiff), cardiomyopathy, heart defects present at birth, diabetes, high blood pressure, high cholesterols, arrhythmia, kidney diseases, obesity, and medications. When these life abnormalities happen, the burdening can be devastating and costly to all parties involved. Therefore, providing early effective individualized discharge education can help in reducing readmission rates and greater patient care outcomes ratio. This quality improvement project incorporated qualitative interviews, an anonymous survey, and database analysis to examine the rates of early individualized effective discharge patients' education. The project concluded with a recommendation for the facility to embark on effective, continuous, and timely patients discharge teaching and making sure that the heart failure video is played by nurses for patients and there should be a way of enforcing compliance on the part of the nurses in making sure the video is the play of during hospitalization before discharge. "A Just Culture" for nurses.

Reducing Hospital Readmission Through Effective Patient Educative for Heart Failure Management

Introduction

One of the leading factors of hospital readmission in patients age 65+ and above is Heart Failure (HF) amongst other conditions and this has posed a challenging and rising cost on both patients and the health care sectors involved in the care provision (Ketterer, Draus, Mossallam & Hudson, 2014). When the body gets older the vital organs also start to slow down, just as in normal life when individuals fail at performing a particular task so also is the body systems including the heart. When the heart fails to pump blood to the rest of the body, that can lead to severe damage and According to the Centers for Diseases Control and Prevention, it is estimated that about 5.8 million people in the United States have suffered from heart failure, and about half of that number are expected to suffer a severe heart attack or even die within 10-5 years of them been diagnosed (CDC, 2020). When heart failure occurs in older patients their mortality rate tends to be high compared to their younger counterpart and their readmissions rate within the 30 days' timeframe was approximated to be very likely double (Tung et al., 2016).

When older patients suffer from heart failure there is a high tendency for readmission due to other comorbidities as the HF hardly occurs on its own. Because the most patient only concentrate on physical signs like weight gain due to fluid retention, shortness of breath when doing activities or walking, and do not pay much attention to self-care which plays a role in total body care, and in most cases, these patients get readmitted within 30 days after a hospital discharged. When heart failure occurs patients should be effectively educated about unhealthy lifestyles that will put them at higher risks in some cases resulting in a fatality. Dietary changes including sodium restrictions can help in controlling the blood pressure which helps reduce the

workload on the heart muscle that has failed and with the potential to continue failing if those measures are not taken into consideration. For successful management of heart failure and a reduction in hospitalization rate, the patient should be allowed to participate in their care management and the focus should be on them so that they can move from the state of illness to the partial or improved status as time progresses. (Marshall, 2015).

Effective Discharge Patient Education initiated by the Agency for Health Research and Quality is an evidence-based intervention that aims to help healthcare providers as a guiding tool for patient engagement together with their families and loved ones as an educational system to help improve the quality of care and increase patient care satisfaction which will lead to a reduction in patients' readmission (AHRQ, 2019). To reduce the rate of readmission within the 30 days' timeframe for overall patient's quality of care, this project wholly supports the patient reintegration back into the community through a transition program that involves other health care professionals like a physician, registered nurse, a home health care provider, home aid, a social worker, and a patient care coordinator to help identify potential risks for readmission among patients with heart failure. Effective patient education on heart failure management, education on polypharmacy and adherence to a medication routine, follow-ups appointments with the outpatient unit were initiated to safely transition the patient back home and help them manage and prevent further or worsen heart failure that will lead to readmission within 30 days after of discharged.

To accurately determine factors contributing to high readmission rate a system analysis was carried out in one of the Northern California Medical facility units and a little over 40% of all patients during the daily multi-disciplinary rounds were readmitted because of heart failure or factors relating to HF. A root cause analysis points to factors such as ineffective discharge

teaching, lack of discharged follow-ups, non-medication compliance, shortened hospital staying, aging, polypharmacy, delirium, mobility, and multi-complexity conditions among other factors. The project aims to help hospital administrators and other healthcare personnel implement strategies using evidence-based practices and interventions to help improve patient safety, overall health outcomes and to minimize the rate of hospital readmissions which will lead to reduced expenditure cost on the hospital and increase cost-savings in the form of revenue on their investment.

Clinical Nurse Leadership Theme

The Clinical Nurse Leader (CNL) is a master's educated and trained using Evidence-based practice (EBP) ready to address and deal with issues that are pertinent to the microsystems even though it may overlap to the Meso and Macrosystems as well. The clinical leadership theme key to this project concentrates on key factors as such Effective communication and the care with the patient at the center of the care provision, and collaboration with other health care providers for better patient satisfaction and cost reduction or savings. In doing so the CNL tries to identify improved and quality measures to incorporate dynamic changes into the practice and implement recent and quality patient care by tracking data to track records of improved clinical outcomes that will be cost savings and effective with the microsystem (King & Gernard, 2016). As a clinical outcomes manager, the CNL accepts accountability for care provision to identifiable selected patients within a specific unit and follows the impacts of care on all levels including the micro, meso, and macro systems in the facility. The core of this project focuses on the CNL as a coordinator and manager of care provision with effective cost management and improve outcomes that are safer, efficient, timely with the patient at the center of the care (AACN, 2013) According to the AACN, 2013 and Chun Mei Chen, 2018, A CNL competency

also useful for such project is being able to facilitate practice change based on the best available evidence, resulting in quality, safety, and yearly responsible outcome.

Statement of the Problem

This project utilizes the 5Ps microsystem assessment tool in providing and presenting the situation in one of the Northern California Bay Area Facilities. Around August of 2021, before the start of this project, the rate of hospital readmission in patients 65+ years with Heart Failure was around 40% among the highest in this facility. There is no special unit at this facility for patients with cardiovascular disease and as result, cardiac patients are admitted to most of the units in the facility. This project focuses on the management of patients with cardiac diseases and those at higher risk for developing heart failure in the facility 65+ irrespective of whether it is a new or readmission case. A simple medical chart review and patient interviewing were conducted while collecting data from the periods between September through October 2021, and a total of 50 heart failure patients were included in the data collection for this project. For a more accurate and time-sensitive data collection a 30days period was utilized, and the results show that 11 patients which account for (22%) of the total patients' population of 50 included in this project have had at least one readmission within 3-5 days after a hospital discharged and subsequent other hospital visits to the emergency department for heart failure related problems. From the medical chart review, it was noticed that about 15% of patients with HF were followed by the hospital transition care program (HTCT), and most of the patients about 40% of the 50% were discharged with a home health service but interestingly 80% of them refuses any kind or form of follow up by the HTCT (Appendix. A)

During this period, it was discovered that shortening hospital stay or early discharge and ineffective patient discharge education was greatly contributing to the high rate of hospital readmission as most of the readmission cases would have been easily preventable as they were influenced by ineffective patient discharge teaching, the early hospital discharge, poor social support, poverty, lack of a spouse or a family member committed to providing care of the patient after discharged home (Renke & Ranji, 2015). Most of the patients interviewed stated that they received little to no heart failure management education while admitted at the facility and that they were not ready for the transition to home or a skilled nursing facility, but they were discharged anyways by their primary care providers for reasons not well understood by them. The facts and data are pointing to EFFECTIVE patient discharge education as key and making sure that information is well comprehended and the discharge follow-up with self-care and medication adherence to the management of HF (Return et al., 2013). When it comes to patient education there is a real challenge as the educational level of the patient and teaching methods of the educator is key, educators should identify the type of learner the patient is and try to explore areas and techniques that will help the learner best understand and retain the information been given to help them manage their health after discharged and reduce the rate of readmission which can be costly on the health care facility.

Project Overview

Working closely with the hospital's short- and long-term goals, the focus of this project is aim at achieve a 15% overall readmission reduction rate six months from its implementation in late 2021 to early 2022 in patients who have suffered from heart failure. The potential ways the project can achieve its aims is working in coordinating with the patients, their families and loved ones, clinicians, other healthcare providers, social workers, and community available resources

to provide improved and quality safe hospital and transitional care while patients are admitted and after been discharged as well. To fully meet those aims the project identify and encourage healthcare providers to greatly rely on evidence-based practices, EFFECTIVE discharged education about heart failure, proper evaluation before discharge, involving and encouraging patients to actively participate in their care center of carefully evaluating that the most important information about self-care management is well understood and in some case asking for teach-back from the patients and their love ones to concrete the information as the patients get ready for discharge not necessarily leaving the discharge teaching for few hours to one hour before the patients get discharged from the hospital when the nurse or discharger will rush into the room to hastily runs through the bulky document within few minutes and missing important disease management information, and before a day or two the patients back into to the facility. The project identifies that for discharge teaching to be EFFECTIVE, the teaching should start from the moment the patient is admitted to the facility and should effectively during the entire period the patient is admitted for as this will help patients better understands their disease or health condition and lessen the burdens on the discharger which will is expected to leads to a reduction in the readmission rate which will have a positive chain effect in the quality of care and overall wellbeing of the patient's health and can save millions in dollar values cost and help save the hospital huge amount in real costs which can be redirected to other areas to improving healthcare deliverables.

This project identifies and creates the EFFECTIVE discharge educational opportunity in August and care providers that buy into the project ideology were incorporated to help in the implementation of the project's goals, there two quality improvement personnel and two nurses for both the day and night shifts that were working closely with the project expectations. As

resources are scarce and need to be effectively allocated it was agreed that meetings will be held every Wednesday from 9: 30am- 10 am for 30 minutes long to see how far the project have achieved its goals or 15% reduction rate in hospital readmission within 30 days of discharge and to look at other variables that will put the patients at risk to suffers another heart failure. The initial start of the EFFECTIVE discharge patient education began its staff training program in early September which lasted for three (3) weeks. The leading quality control team completed their validation by the last week of August and they Champion nurses' validation early September.

The plan for the project evaluation was discussed in one of our regular Wednesday meetings and the Quality team and Assistance Nursing Managers were included as part of the process and outcome evaluation process. The Nurse Champions were given the responsibility to observe and audit nurses in the microsystem to make sure that Effective patient discharge education was tailored in line with the project goals and objectives aiming at reducing hospital readmission rate among patients with HF older than 65 years. The focus of the teaching was making sure that unit nurses are using the discharge guidelines put in the discharge folder by the multi-team member's gear towards reducing hospital readmission in the project cohort of patients. (65+ years and with HF). Since the teaching was for patients that will be discharged home, the audit was to monitor and watch those nurses as they go through the discharge teaching and make sure that patients or their loved ones or home caretakers understand the signs to look for, what to and how to call if they must and how to self-care for themselves whiles out of the hospital. Data from the observed teaching and in-patients survey collected are used for the change project evaluation and measurement of staff and patients/ loved ones and family understanding of discharge teaching and sees if that makes a positive care outcome before the

change project implementation. Results collected were discussed during the morning unit huddles and were put in the nursing break room and notice board as a way of motivating nurses and encouraging ongoing EFFECTIVE discharge teaching and more learning opportunities for nurses and an effort to keep working towards reducing the readmission rate.

To help the project focus on its goal, data collected on patients and staff observations and feedback will be vital for the achievement and implementation of the change project. Because EFFECTIVE discharge patient education is intended to improve the patient's transaction process, an in-patient assessment will be conducted before the patients get discharged to better assess Heart Failure patients understand those information and education to help them as they transition back to the community. A few weeks to a month after EFFECTIVE discharge patient education a chart record review will be carried out to measure and evaluate patients with Heart Failure for outcomes and effectiveness within the 30 days window time frame for readmission. The project will use descriptive analysis to compare the microsystem unit HF readmission rate as compared to the pre -and- post-impact of the EFFECTIVE discharge patient education as use that data to show how effective the change project is an impact that will have on the cost savings. (Appendix E: Project Timeline).

The project starts data collection from the identified microsystem for about (3-6weeks) before the initiation of the actual project, by surveying and in-hospital patients with heart failure about their understanding of their health condition and self-care and what can be done if the need arises. Ask about the heart failure video in the in-hospital's system if anyone has shown them and what they understand from it. The initial data was analyzed, and several pieces of literature were reviewed to identify specific project goals and aims in line with the microsystem unit and hospital aims and goals. Upon identification of those goals, several team meetings were held

with the quality team members, EFFECTIVE discharge patient education in one of the microsystem units was identified as an area of need and one of the reasons responsible for the high readmission rate in the facility. Unit Champion nurses that buy into the project goals were brought in and meetings were held to lay out the road map and factors for success for the project. Detailed objectives, ways forward, expectations, responsibilities, steps of implementation, and possible roadblocks were identified and discussed. And lastly, the cohort of patients with heart failure within 30 days of discharge from the hospital was identified and a period between 3-5 weeks after the project implementation was stated for the project evaluation for results and effectiveness of the project.

The project outcome objective identified nurses in the selected microsystem unit to conduct EFFECTIVE discharge patient education on heart failure, review the project goal of reducing hospital readmission in the facility, demonstrate an understanding of the project objectives with accuracy and effectiveness. The project expectation is that by December 2021, 90% if not all nurses in the unit will be on-board doing EFFECTIVE discharge patient education to help minimize the rate of heart failure patients by 15% (from current 30-40% after One- two months of project implementation). Meeting this goal will be a benchmark for meeting the overall 15% by the end of the operation year 2021. The project focuses on effective discharge patient education to help reduce patient readmission within the 30-days in heart failure patients age 65+ years. Heart failures continue to pose a difficult challenge for patients, their families, loved ones, and that health care sector as well, and without effective discharge teaching there are very high possibilities that the healthcare team will continue to see rising numbers in the returning patients to the hospital regularly which can be costly for both patient and the facility. Evidence-based interventions were developed and utilized by the project to assist whiles

providing patient-centered care services and education relating to a patient with heart failure to reduce the readmission rate. The goal of the project is in line with the facility's goal to start early patients EFFECTIVE discharge education front the moment the patients are admitted all the way leading to the discharge day, to be sure that patients are understanding the core information in the teaching and working towards the goal of reducing readmission rate to ascertain that they understand about their health conditions pre -and- post-hospitalization knowledge about their existing health condition (David, Howard, Dalting & Britting, 2018).

Specific Project Aim

The specific aim of the project is to reduce the hospital readmission rate in patients with CHF in the North California hospital by conducting early effective patients discharge education and evaluating the effectiveness of the education before discharging the patients. The short-term goal of the project is to reduce the hospital readmission rate of heart failure patients by 15% after discharge from the hospital and to achieve this goal the project used Kotter's Eight Steps to Change theory to define the essentials of the change project, the cost statement analysis will be found on (Appendix D)

Methodology

Microsystem Assessment

To best understand the unit, a variety of microsystem assessment tools were used, including a Fishbone diagram (Appendix B and SWOT analyses in Appendix C) the project was

able to identify root causes, challenges, barriers, genetics, and modifiable risk factors contributing to current and potential readmission problems in the selected microsystem. The results from in-patients questioning and survey revealed that inadequate and effective patients' education was responsible for reoccurring readmission of patients with heart failure 65+ years and was mostly due to nurses waiting until the last hour or few minutes to start discharge education by which time they are either running against time or seeing other patients or must chart with the patient multidisciplinary team working on discharge. Talking with nurses in the microsystem unit, it was observed and witnessed that key factors responsible for this were that nurses were unaware that they should be teaching, burned out, work fatigue, less prioritize the discharge teaching, not well prepared for the task and being unfamiliar with the facility guideline and policies on discharge. Further root cause analysis also highlighted factors such as shortened hospital stays, diversification of the patient's population, number of traveling nurses present in the unit, the unwillingness of nurses to engage in EFFECTIVE patients discharge education leading to the near or miss opportunity for patient education.

During an in-unit observation of the multi-disciplinary rounds, research, and existing literature all shows that with EFFECTIVE discharge patient education there is a proven pathway that reduction in hospital readmissions and cost savings are high possibilities if every person plays their part and work as a team with the same goal to reduce readmission rate in heart failure patients. With EFFECTIVE patient education patients will be empowered about their health condition and will be fully aware of what is going on with them so they can provide self-care because when the patient is involved and knowledgeable about their health conditions, they are better able to manage it and comply with medication regimen for better overall health outcomes. According to (AHRQ, 2017). Meaningful patient engagement is critical and continues to be an

important area of concentration for healthcare professionals, and nurses have a wider scope and responsibility to provide effective patient education that will lead to improving patients' self-care management of chronic illnesses like heart failure. And one way of achieving this is through earlier EFFECTIVE discharge patient education. Patients' understanding of communicated information by healthcare personnel will help increase and improve their participation in their care which will lead to patients' satisfaction, compliance with treatment regimens, improved outcomes, decreased cost of hospitalization, an overall decrease in readmission rate. (AHRQ, 2017).

Ethical Considerations

Ethical concerns included benevolence, and patient privacy, and patient autonomy. The Healthcare industry and nursing profession must demonstrate intent to provide the most ideal care possible. Organizing appointments before discharge demonstrates a high level of commitment to the best possible care, not only in this microsystem but in the larger continuum of care realm.

Cost-Benefits Analysis

In a microsystem unit in one of the North California Bay Area Hospitals out of a total of 50 patients with readmission, there were 11 patients with acute to chronic heart failure readmitted which accounts for 22% of the total readmission rate in 2021. Current data from the centers for Medicare and Medicaid Services (CMS 2021) approximated that one out of any five patients with CHF will be readmitted within 30 days window after being discharged from the hospital with an estimated cost of \$15,732 per patient if readmitted in the same facility, but the

cost will be around \$25, 879 if readmitted to a different facility with an average length hospital stay of 5-7 days. Let says in this facility 1000 patients with high to medium risk factors are discharging, this means that a total of 220 patients (22%) will be readmitted, and their cost of readmission will be around \$ 3,146,400. The project goal is to reduce the rate of readmission burden on the facility by 15 % in patients with heart Failure 60+ years within the 30 days' timeframe window by the last quarter of 2021 to the 1st Quarter of 2022. This means that potentially reducing the readmission rate in the facility by 66 patients of the 220 with a possible cost saving of \$ 1,038,312.

This facility transitional team for heart failure patients comprises a patient care coordinator (PCC) and a medical social worker (MSW) who follows and coordinates their transition back to the community and usually manages about 15-25 patients a day. Taking into consideration their salaries according to the salary scale the PCC earns about \$ 125,000 and the MSW \$100,000 yearly respectively. The project involves a Clinical Nurse Leader (CNL) in the unit working together with at the microsystem promoting EFFECTIVE discharge patients' education in the unit to reduce the readmission rate by 15% by the end of the year 2021 leading to 2022. For this project, the CNL will be working say 300 hours with a \$ 65 per hour salary estimate, which will amount to \$19,500 which will be a viable project in cost savings. The budgetary impact of the project will be let say 25 Registered Nurses that meet every 30 minutes to discuss the way forward and project assessment will cost around \$ 1,500 added educational materials to be used pens, papers, and printing will be around \$1,000. Having the CNL coordinate with the transition team will contribute greatly to helping to reduce the readmission rate of \$ 1,025400 in a year if the project is implemented fully. And an evaluation of the project cost savings potential will be used to gain support for the project to other units or facilities.

Change Theory/ Intervention

For the project to meet its 15% reduction rate in heart failure patients by the end of 2022 (Jan-Mar), Kotter's Eight Steps to Change was utilized in the framework for the culture of change. Using Kotter's Eight Steps of change the first step was urgency creation, in doing so the project collected data from the microsystem, and a needs assessment was as well analyzed, edited in the PPTs which shows the need for change in the microsystem unit. During meetings evidence collected was presented to gain support, and literature with other policies was reviewed which allied with the project overview. The next step was forming a strong team of coalition with the unit's Assistance Nursing Manager (ANM), The Patients Care Coordinator (PCC), the Transition Care Program (TCP), a Medical Social Worker, and the Quality Control team were involved in meetings during the huddles to see the success of the project, And the third step was the creation of pathway of change, and change in itself involves parting with old ways and embracing new ideas which are not so that easy at times.

For the staff to have a clear picture of the change project, and notice board was used and placed in the nursing breakroom, which outlines the change theory steps of EFFECTIVE patient discharge education and the project's timeframe. The fourth step involves communicating the project's vision, doing the updates about the project were given from time to time to the microsystem unit. The Fifth step removing humans and other obstacles. In doing so the microsystem Champions were continuously educating, auditing, and supporting the unit staff on quality and prevention methods. Old and senior nurses have their way of doing things which they

believe is always the best even the evidence shows otherwise, so it takes time and motivation to get them doing the thing which has proven EBPs at are different from what they know and used to. The sixth step crating of short-term success. Nurses were commended for doing embracing the change project, and stickers of recognition were given to everyone for their effort in adapting to the goals of the project. In the seventh step, the project continues building on the little positive changes already made, and the final eighth step was evaluating the change made so far by the project and reinforcing successful outcomes. From the look of things, if EFFECTIVE patient discharge education can be successfully promoted and followed, it will prevent and reduce hospital heart failure readmission rate in patients 65+ years. The project proposal was written by following the northern California Bay Area hospital process to get approval. The facility is to promote this evidence-based nursing-led project to the entire facility with other microsystem units, which will create a change of culture right through the healthcare system, thereby improving patients' health outcomes and promoting effective cost-savings whiles maintaining high-quality patient care outcomes.

Data Sources/ Literature Review

The project reviewed the literature to ascertain the causes of hospital readmission in the selected cohort and its findings and interventions to help the patients transitions care and to also minimize those avoidable readmission cases. During the research conduction phase, a key database was utilized which include PubMed, CINAHL, and Scopus. The following keywords were used in these searches: readmission, risk factors, Heart Failure, 65+ years, and effective patients' education. Filters included settings to English-only articles (including translations) and publication dates on older 2011. After reading of few recent articles, a few foundational students

were also incorporated for a better understanding of the changing states of readmission. Few articles were selected based on their relevance to the PICO questions and the project's overall aim and goals.

Designing the PICO statement, the project concentrated on what can be done by nurses to increase and improve on effective patients discharge education to reduce heart failure readmission rate? Peer-reviewed literature was mostly used going back not later 5-7years. The PICO focuses on **P** (Population) which includes patients admitted to the facility with cardiac-related problems such as heart failure exacerbation, **I** (Intervention) which aims at providing early effective discharge patient education to reduce readmission within the 30days window timeframe and enabling patient's self-care management, **C** (Comparison) was to the usual care to see if there were any changes in care provision, and **O** (Outcome) to evaluate and see if the reduction in readmission by 15% was meant by the project.

Several factors play a role in increasing hospital readmission starting with the patient, hospital, care provision, care provider, culture, and belief systems of all parties involves. Communication failure, incomplete treatment regiments, ineffective discharge education, lack of access to healthcare services, socio-economic status and care providers seeing themselves as the sole knowing of everything even when they patients knows themselves better have posed a challenging factor that is hard to overcome and as result readmission is still on the rise. (Mansukhani et al., 2015) Missing nursing care coordination and heart failure have been proven to have a direct correlation which in turn leads to an increase in hospital readmission in those patients with heart failure that is 65+ years. A cross-sectional observational study was conducted by (Carthon et al, 2015) to look into the correlation in-depth, it was found that there is a strong direct relationship between missing nursing care and hospital readmission rate and that 42.0% of

that is related to a poor or ineffective combination between nurses and their patients, and 31.5% factors are attributed to ineffective education provided by nurses to either their patients, family or loved ones, and that 35.5% is related to ineffective development and updating of patients care plans or coordination.

In another development, using a meta-summary analysis to look for qualitative data relating to barriers setbacks to patients self-care looking at 2260 kinds of literature and based on 814 patients reports. The main barriers and setbacks to patients self-care includes; cultural and institutional beliefs systems, benefits of care to patients, chronic and acute health status of the patients, comorbidities, socioeconomic status, illiteracy level of the patients, lack of knowledge of their health condition, ineffective or inadequate information about their health, lack of involvement in their care, disbelieve form healthcare providers about what patients says about themselves, ethnic backgrounds of parties involves in the care provision, physical and mental status of the patients, past health experience, organizational limits and what is the health goal of the patients (Herber et al., 2017) After a heart failure incidence, trying to reduce and prevent another scenario can be challenging as adopting to self-care, medication regimens, lifestyle changes poses a different pathway for each patients, and therefore, this study is suggesting more and future interventions that will address those challenges in order to promote and encourage self-care ideology in heart failure patients.

Health literacy is one of the key factors that contribute to greater challenges when patients suffer from heart failure as it limits their participation in their self-care. EFFECTIVE discharge patient education must be designed and geared towards focusing on an individualized educational method as each patient is a dynamically unique different person and the level of understanding varies from one patient to another since no two patients can think and understands

teaching the same way. Evidence indicates that low impact and easy to read language-free educational materials will be significantly useful and helpful in trying to reduce the rate of hospital readmission in patients 65+ years with heart failure. (Dickson et al.,2015). In one of the North California hospitals where the project is intended for, in-hospital discharge patients educational materials were reviewed multiple times to ascertain the quality and effectiveness of the material and it was concluded that the discharge package contains so much overwhelming information and instructions given to heart failure patients that were decided upon to be limited to just simple, easy and important materials that the project believes will be needed and useful and easily understandable by those patients when they get discharged home.

When these patients with heart failure 65+years get to the hospital, so many things and thoughts are already running through their heads which makes them so anxious and uncertain of what is next for them on their hope of survival, and even more so with those that have had multiple readmissions already due to heart failure exacerbation, and nurses not giving them adequate information about their health conditions only makes their situations worsen, either because they nurses have overworked themselves or because they do not want to ask relevant questions by patients who are so frightened about health. Several factors inhibit nurses and patients communication at this point which may include: Lack of knowledge on the part of the nurses, limited communication ability (Language barriers, lack of educational tools, lack of the skills needed, lack of time, and low prioritization to provide patient education) When patients have a lead knowledge of their health conditions outcomes tend to be greater, and medication regimens are easily followed which makes it better for all parties involved in the care provided. During the multiple hospital rounds during this project and witnessing so many discharge teachings, nurses should rise to the need of providing EFFECTIVE discharge patients education for heart failure

patients and that education should start ever earlier from when these patients get admitted in the microsystem unit and not waits until it is few hours to discharge as it was mostly observed in one of the North California hospitals.

Timeline

The project was started in Mid- Late August 2021 and will be completed by Mid December 2021. Initial data collection was conducted by reviewing Fifty heart failure patients from September through October 2021, and a few weeks before that, data collection was done to help guide the study so that roadblocks and potential barriers will be identified that were considered useful for the success of the project. Data were collected from directly engaging and interviewing admitted patients with HF, talking with primary care nurses, conducting root cause analysis through multiple team meetings with staff, Champion nurses identified by the project team members, the educational unit for the facility, and the quality control team members. (Appendices A, B, C, D) The intent and goal of the project were communicated in August to staff during a morning huddle in the microsystem unit. The team identified Champions nurses to help in the chosen unit, and other key players from the facility, meetings were held every Wednesday between 9:30 am- 10: 00 am for 30 minutes and Thursdays for an hour with other team members to discuss the pathways and pinpoints potential roadblocks and see what can be done to make the project a successful one. The educational unit after several meetings decided to incorporate into their orientation program staff education on Early EFFECTIVE discharge patient education, and they Champions nurses to complete the validation by October and the validation on EFFECTIVE discharge patient education.

A chart review one month after the validation to see what progress was made, and to track and monitor patients with heart failure and measure that data to see the effectiveness of the project and how it was impacting the patients and measuring that outcome against the 30days' timeframe for readmission. For comparison purposes, descriptive analysis was widely used to capture heart failure readmission for pre-and post- EFFECTIVE discharge patients' education the results of which will help in showing the cost-saving and quality control of the project as a bigger picture for show how viable to project can be. The 30days' timeframe readmission data collection on patients with heart failure will be used as an indicator as to whether the implementation of the project justifies a reduction in readmission rate amongst patients with heart failure 65+ years, and if that can be an important component in decreasing the incidence of heart failure in patients within the 30days window.

Results

As part of the facility on-boarding training process, all new nurses will be educated on using Early EFFECTIVE discharge patients' education, and all bedside nurses in the unit will also get training. Due to limited time to implement the project no actual result was obtained be reported, supportive results would have included evaluating any changes to reduce the readmission rate in CHF patients and occurred after patient education was implemented. Since the education was still ongoing and not yet completed, the analysis of its impact was not to be determined.

Nursing Relevance

Most research linked with readmission is more focused on the discharge process to get the patient out and provide them with discharge information and resources available beyond the hospital. However, patients are unique and dynamic in various ways and learn things differently. The essential missing part in all of this is the lack of EFFECTIVE discharge patient education. EFFECTIVE discharge patient education is the teaching that starts right from at the admission point before CHF patients are even admitted into the microsystem unit. It involves providing the patient with the needed resources, education, and information that empower them to learn and understands their health conditions and being involved in their care as the patients know themselves and what is happening with them. CNLs are strategically placed to work and partner with patients and their loved ones to enable them to initiate and continue with a healthier lifestyle while focusing at the same time on their responses to their symptoms and existing health conditions.

The project pre-and -post-implementation comparisons on a patient with heart failure readmission rate will be proof of its viability using cost-saving methods and quality care delivery in the new era of healthcare provision and will undoubtedly significantly reduce the cost of readmission on the microsystem unit, the facility, and the healthcare sector. Any form of change poses a challenging factor since things move from the old conventional ways which make people uncomfortable, the healthcare delivery and financing is going through a major crisis at the time and creating greater opportunities for the nursing profession and allowing new nurses to take leadership roles in the helping to shape what the face of the nursing profession will be the future. CNLs worked hard to identify quality measures and areas that need improvement and incorporate new ideas with evidence-based practice and implement them into the new care

guidelines for better patient care outcomes and track those data to be able to show improved clinical outcomes and will be cost-saving and effective within the microsystem unit since CNLs are risk anticipators and educators.

Summary Report

The microsystem in which the project work was done consisted of 40 beds and about 37% of the patients were patients with primary admitted or readmitted with chronic heart failure or cardiovascular disease. In the initial stage of the project, a chart review was conducted to ascertain the staff, patients, and the microsystem to be able to identify or recognize patients at risk for heart failure. The macrosystem annual report shows that readmission was on the rise and heart failure patients accounted for 25% of the total yearly readmission rate. The facility data collected shows that of the total of 60 patients discharged, 15 which is 25% of the patient population was returned to the hospital within the first 30 days with heart failure-related conditions (Appendix A) A fishbone chart was used to identify the root cause analysis of heart failure patients and patients who are at high risk for readmission relating to CHF. From a needs assessment conducted, the result strongly correlated with ineffective discharge patients' education according to various accounts from multiple rounds of in-hospital patients self-accounts, low priority patient education, and health illiteracy. (Appendix B) According to various nurses accounts factors responsible for their lack of EFFECTIVE discharge patients education were lowly prioritizing patients education are due to the facts that nurses are always overloaded and burned out on every shift, lack of enough time to conduct EFFECTIVE discharge

education, difficulty allocating some educational material and pandemic (COVID 19) relating to Strick hospital changed policies and protocols which make EFFECTIVE discharge patients education so challenging and difficult. This project's goal is to reduce the hospital readmission rate in patients age 65+ within the 30days window after hospital discharge within the microsystem. If this project can adequately address the root causes and barriers within the microsystem unit, it will significantly reduce and prevent hospital readmission rates in patients 65+ with heart failure.

The CNL started the project in September and concentrated on key areas like early effective discharge teaching, effective communication, and collaboration with the patient and another healthcare provider, incorporating new components to help improve clinical outcomes which are cost-saving effective to the microsystem unit. The literature review as well revealed evidence in support of the project so also the PICO statement and nursing databases used which includes: CINANL, PubMed, Scopus, and Google scholars' publications within the last 5-7 years using keywords as Nursing, readmission, heart failure, effective discharge education, and communication. EFFECTIVE discharge patient education and multidisciplinary approach were used to educate and support bed-sides nurses to tailor discharge education on individual patients bases using simple language, and easy to read and understand learning and educational resources to help patients understand their health conditions and to know what is happening to them and the intended care provision. (Appendix C) SWOT Analysis

Summery/Discussion and Conclusion

Descriptive analyses are used to evaluate the pre-and-post patient education and understanding of the effectiveness of teaching the heart zones (Appendix F) Unit champions are responsible for auditing and observing the microsystem unit nurses demonstrate the use of EFFECTIVE discharge patients' education. The EFFECTIVE discharge patient education project faced some resistance from a few nurses who were not ready for the change project and to help them, daily progress and success rate was posted on a nursing break room to help them orient themselves with the project goals. One-page heart zones check for evaluation of the teaching tool was placed in the microsystem unit for easy access on EFFECTIVE discharge patient education and this will be used for auditing purposes as well. (Appendix G). The project goal is a 15% reduction in hospital readmission in a patient with heart failure within the 30days window after discharge from the hospital by the end of 2022. The project has been introduced to the hospital quality control team, as the team and other health stakeholders in the hospital want to bridge the gaps in care provision. The CNL-led project is an example of evidence and research-based practice that follows the RCA to help identify opportunities for quality and safety improvement. From the data collected and in-hospital survey conducted heart failure accounts for a high percentage of the total hospital readmission and the outcomes evaluation of this project is found to reduce the readmission rate in heart failure patients and improve performance on the 30 days after discharge window, therefore, this project is expected to gain support and be implemented to other microsystems and other areas of diseases leading to hospital readmission within the Northern California Hospital and possibly other facilities as well. In Appendix H: Sample questionnaire for Patients and Nurses

Conclusions: The expected project conclusion is that implementation of the project will lead to an increased rate of patients being discharged with a follow-up appointment, resulting in decreased readmissions rate and cost-saving for the microsystem and the facility which can be beneficial to the patients and their loved ones as well as the facility as those extra cost -savings can be used in other sectors to keep involving the overall facility operating and capital costs which will be in return leads to an increase in the revenue and quality patient care outcomes.

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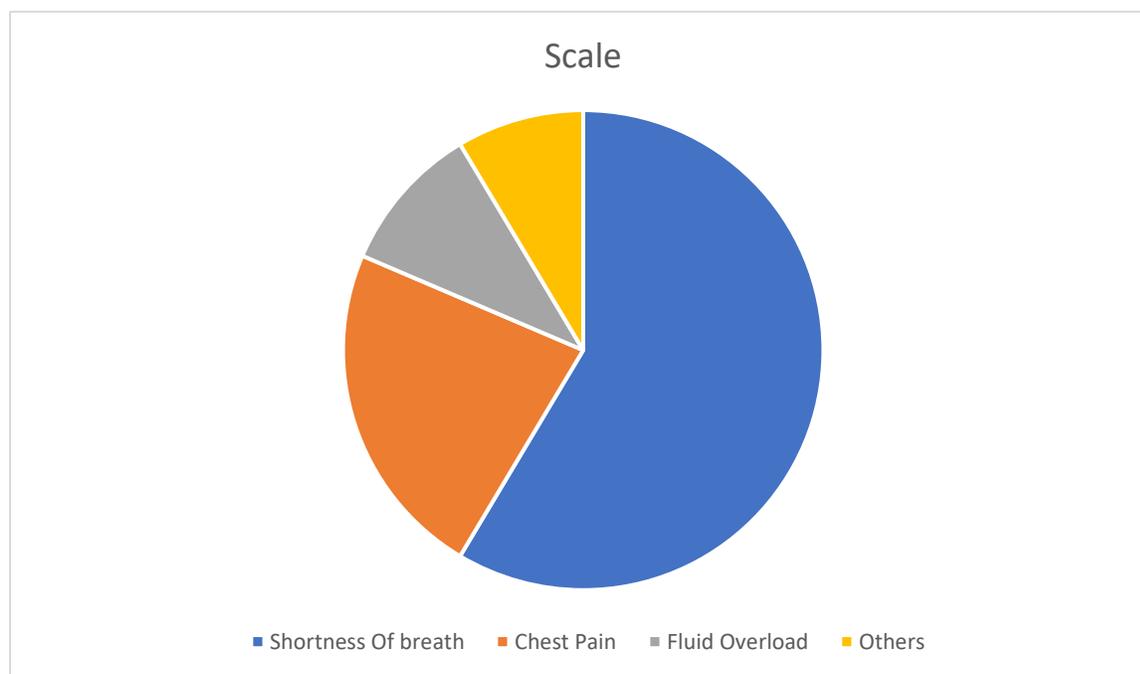
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Appendix A

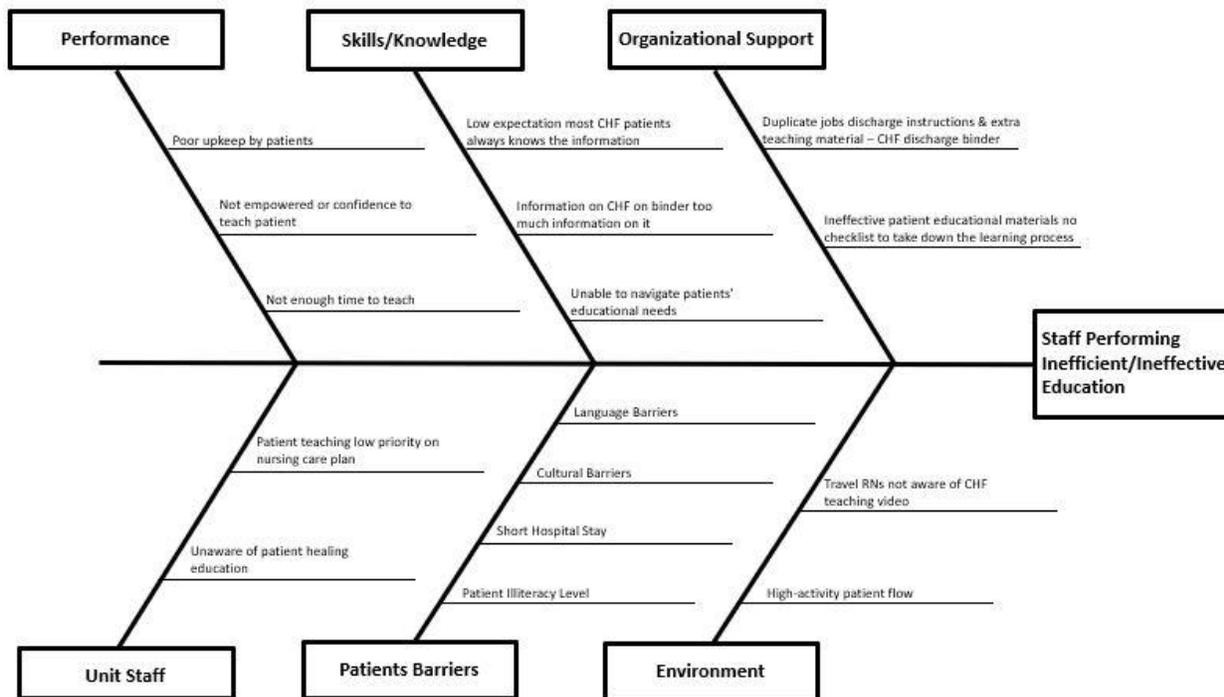
Hospital Chart Review	
Total Patient Reviewed	50 Patients from the Microsystem Unit
Total Patients Population	Primary Diagnosis: CHF
Location of the Location in the Hospital	One Of North California Hospital in the Bay Area
Data Collection date	From August to October 2021
Areas for Focus for the Project	Hx: Readmission within the last 30 days after discharge Reason or Readmission: Chest pain, Shortness of breath, Fluid overload, Others



Appendix B

Fishbone Diagram

Root-Cause Analysis: Fish Bone Diagram



Appendix C

SWOT Analysis

Strengths (Internal Factors)	Weakness (Internal Factors)
<ul style="list-style-type: none"> ❖ Staff support and willingness to change ❖ About 70% of the staff have at least 5years of clinical experience ❖ Multiple team members in the unit to assist with data collection, analysis, and special project ❖ Patients' willingness and readiness to be involved in their care provision ❖ The Facility readmission CHF team are ready to reduce the rate of CHF readmission rate 	<ul style="list-style-type: none"> ❖ Lack of effective education on readmission pathway ❖ High acuity patient care ❖ Nurses prioritize discharge effective education at the bottom of their list ❖ Confusion and too much discharge instruction ❖ Confusion on the care continuity from care providers ❖ Lack of effective team communication on the path of care providers.
Opportunities (External Factors)	Threats/ Challenges (External Factors)
<ul style="list-style-type: none"> ❖ Reduction in readmission rate ❖ Improve patient care outcomes and safety ❖ Enhance effective care team communication ❖ Improve patients' education and understanding of CHF ❖ Enhance and improve team coordination on care provision 	<ul style="list-style-type: none"> ❖ Roadblocks from staff ❖ Low confidence from staff and patients about educational resources ❖ Patients' non-compliance with care regime and follow-up appointments ❖ Lack of support from some decision-making members

Appendix D

Cost Statement Analysis

The cost to treat Heart Failure Readmitted within 30 days for hospital Discharge in 2021

2021 Readmission for Heart Failure Patients	
Cost of readmission per patients' same facility:	\$ 15,732
Readmission for HF patients in this facility 22%	
Total discharged patients with HF for project cost analysis 1000 patients annually	
Total facility readmission within 30days window 220 patients	
Total cost of readmission in dollar value 22%	\$3,146, 400
The cost of TCP include the PCC and Social worker on the project annual salary of \$225,000	
Total cost on HF patients for the project (\$225,000+3,146,400)	\$ 3,371,400

Cost to Develop a CNL- Led Project

Cost to Hire a CNL for the project 300Hrs (\$ 65)	\$19,500
Cost of 30minuts meetings for 25RNs	\$1,500
Cost of material for the project, papers, pens, weighing scale, and others	\$ 1,000
Total cost for the CNL-Led project	\$22,000

Assuming same patients' number with HF in 2022 with readmission

Cost of readmission of HF patients 22%	\$ 3,146,400
Cost the transition care team PCC& MSW	\$ 225,000
Cost of CNL-led project	\$ 22,000
Total cost for the CNL-led team (Readmission Project)	\$ 3,418,000

If the project goal of 15% readmission rate in patients with HF is achieved total cost of saving of the microsystem unit will be:

The total cost of readmission on HF patients (CNL-Led project)	\$ 3,418,000
The total potential cost-effective saving if the project is implemented effectively	\$ 1,025,400

Appendix F

Teaching tool for self-assessment The Heart Zones

HEART FAILURE ZONES

<p>Daily Self Checks & Self Care</p>  <p>Complete log on back of form daily.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Weigh yourself before breakfast every day. <input type="checkbox"/> Check your feet, ankles, and legs for swelling. <input type="checkbox"/> Take your medications every day. Keep at least two-week supply of medicines. <input type="checkbox"/> Eat a variety of fruits and vegetables, whole grains, low-fat dairy products, skinless poultry and fish, nuts, and legumes. Limit unhealthy fat and sweets. <input type="checkbox"/> Limit salt intake (No more than 2000 mg of Sodium or 1 teaspoon of salt in a day). Do not add salt to food. Avoid canned, packaged food and limit eating out. <input type="checkbox"/> Avoid/minimize alcohol, caffeine, and sugary drinks. <input type="checkbox"/> Drink less than 6 small cups (48 Ounces) of fluid daily (water, juice, milk, tea, coffee). Follow your Doctors order on fluid restrictions. <input type="checkbox"/> Get daily physical activity, as recommended by your provider.
<p>Which ZONE are you in today?</p>	
<p>GREEN ZONE <u>Great Job</u></p>  <p>You are doing well.</p>	<p>ALL CLEAR! This zone is your goal. Your symptoms are under control.</p> <ul style="list-style-type: none"> <input type="checkbox"/> No change in my weight. <input type="checkbox"/> No swelling in my feet, ankles, stomach, or legs. <input type="checkbox"/> My breathing is normal. <input type="checkbox"/> My sleep is normal. I can lie flat without shortness of breath. <input type="checkbox"/> My energy level is normal.
<p>YELLOW ZONE <u>Caution</u></p> <p>Be careful. Your symptoms are changing.</p> <p><u>Call - not email</u> Kaiser Advice Line 1 (866) 454-8855</p>	<p>If you have any of the following symptoms call the Kaiser Advice Line</p> <ul style="list-style-type: none"> <input type="checkbox"/> My weight has increased by 2 pounds today OR My weight has increased by 5 pounds in the last 5 days. <input type="checkbox"/> I have increased swelling in my feet, ankles, or legs. <input type="checkbox"/> I need to use more pillows when I sleep or waking up from sleep to catch my breath <input type="checkbox"/> I am too tired to do my normal activities. <input type="checkbox"/> I feel short of breath while talking or walking more than usual. <input type="checkbox"/> New or worsening dizziness, lightheadedness, or trouble with balance. <input type="checkbox"/> Cough that does not go away, especially when you lie down.
<p>RED ZONE <u>Emergency!!!</u></p> <p>Go to Emergency Room or Call 911</p>	<p>EMERGENCY. Go to the ER or Call 911 if you have the following:</p> <ul style="list-style-type: none"> <input type="checkbox"/> I feel short of breath at rest. <input type="checkbox"/> My weight is up 5 pounds in one day. <input type="checkbox"/> I have swelling in my belly and feel bloated. <input type="checkbox"/> Fainting episodes. <input type="checkbox"/> I am too tired to do any activity. <input type="checkbox"/> Coughing up foamy pink mucus. <input type="checkbox"/> Chest pain, discomfort which does not get better with rest or nitroglycerine medication.

Source: CDC. (September 8, 2020) Retrieved from: https://www.cdc.gov/heartdisease/heart_failure.htm. AHA. (May 23, 2017) Retrieved from: <https://www.heart.org/en/health-topics/heart-failure/treatment-options-for-heart-failure/lifestyle-changes-for-heart-failure>

Appendix G: Sample Questionnaire questions (Patients)

CHF - Patient Survey

Required

1. Has anyone gone over the heart failure zones with you, explaining when to call the advice line and when to go to the emergency department or call 911?

Yes

No

2. Have you watched the heart failure video during this hospital stay or others?

Yes

No

3. Do you have a scale at home?

Yes

No

4. During your last hospitalization, did someone tell you what signs and symptoms to call the advice line for?

Yes

No

Maybe/ I don't remember

5. When you went home did you feel ready to go home?

Yes

No

Submit

Never give up on Life

Appendix H: Sample Questionnaire questions (Nurses)

Nurse survey - patient education for CHF

1. Do you know the talking points for teaching your patients when to call the advice line (what heart failure signs and symptoms)?

- Yes
- No
- To some extent

2. Do you know the talking points for teaching your patients when to call 911 or go to the emergency department (what heart failure signs and symptoms)?

- Yes
- No
- To some extent

3. When assessing your patient with heart failure, do you know the signs/symptoms related to heart failure that you should call the doctor about?

- Yes
- No
- To some extent

4. Please rate your comfort level for the following statements:

Very uncomfortable

Uncomfortable

Neutral

Comfortable

Calling the physician when you have concerns about a patient being discharged too soon

Teaching your patient about heart failure signs and symptoms

Teaching about medications and side effects

5. Do you normally show patients with heart failure the heart failure video on the Kiosk?

Yes

No

Sometimes

