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The Effect of Standardized Patient Education on 30-Day Hospital Readmissions for Heart Failure Patients in the Outpatient Setting

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Abstract

Problem: Heart failure (HF) is the second leading condition of hospital readmissions. Evidence shows that patient education on self-care and disease management can help reduce and prevent 30-day hospital readmissions. Registered nurse case managers (RN CMs) can help improve patients' ability to self-manage their condition and prevent 30-day hospital readmissions by applying a standard approach to patient education.

Context: The Integrated Care Management (ICM) is an outpatient department that provides post-discharge patient calls. The ICM RN CMs utilized various HF patient education tools for patient teaching. The organization's HF task force developed health-literate patient resources to be used uniformly across the system.

Intervention: RN CMs will be trained on standardized HF resources. All HF patients eligible for ICM services recently discharged from the hospital will receive the newly standardized HF education from the RN CM.

Measure: The targeted outcome is reducing the 30-day hospital readmission rate for HF patients by 2.3%. The process measure is to achieve 100% utilization of a documentation template applied to all HF patients receiving HF education.

Results: There were no HF readmissions within the project time frame, thus achieving the target reduction of 2.3% for the 30-day HF hospital readmission rate from 11.9% to 9.6% %.

Conclusions: Standardized HF patient education tools and documentation templates can streamline the management of HF patients after discharge from the hospital and reduce 30-day readmissions in this patient population.

Keywords*:* heart failure, patient education, 30-day hospital readmissions

According to the National Resource Directory data, heart failure (HF) was the second leading condition of 30-day hospital readmissions, with septicemia being the first (Weiss and Jiang, 2018). The data shows that 18.2% of HF patients were readmitted to the hospital within 30 days. HF is a costly chronic health condition projected to rise by 127% costing $69.8 billion by 2030. More than two-thirds of the cost is related to direct medical care (Virani et al., 2020).

There is no cure for HF, but individuals living with HF can improve their quality of life with medication, diet, and exercise as prescribed by their physician (American Heart Association, 2017). In addition, patient education can improve self-management of the disease and the appropriate utilization of healthcare resources (Ruggiri et al., 2010). Standardized patient education resources and documentation tools can effectively manage HF patients and communicate the care plan to the patient, providers, and the interdisciplinary team.

Background

The microsystem assessed for this paper is the Integrated Care Management (ICM) program, a multi-disciplinary team that offers patients in-person and telephonic case management in the outpatient setting. An analysis of patient data in the microsystem revealed that HF patients are among the top ten patient diagnoses in hospital readmission rates. Therefore, HF patients are a high-priority focus for the ICM team and a target population for system-level initiatives.

This microsystem is a newly integrated team within an extensive integrated healthcare system in Northern California. Previously, these outpatient case management departments were formed independently and worked in silos. A system-level focus on value-based populations led to a population health service division which necessitated the integration of free-standing case management departments to create a standard system approach to case management. The

microsystem assessment tool revealed that the ICM department needs a standardized patient education plan and documentation templates to effectively manage HF patients and communicate the plan of care to the care team.

Problem Description

The microsystem's organizational priorities for 2022 include focusing on Medicare fee-for-service patients, also known as direct contracting entity (DCE) patients. This payer model bears risk on the microsystem to effectively manage DCE patients within the confines of utilizing preferred providers. Key performance indicators include 30-day all-cause hospital readmission rates, patient engagement, and emergency department utilization rates. When patients are discharged from the hospital, they are most vulnerable to readmissions within the first 30 days after discharge (Cox et al., 2017). The lack of a uniform patient education plan for managing HF patients needs to be addressed in the microsystem. Using evidence-based practice to create a standard approach, case managers can have the tools to help improve patients' ability to effectively manage their self-care and prevent the overutilization of healthcare resources.

Available Knowledge

The PICOT question for this quality project is as follows: In HF patients enrolled in ICM (P), how do standardized HF patient education resources (I), when compared to no standardized HF patient education resources (C), help prevent heart failure readmissions (O) 30-days after discharge from the hospital (T).

To address the PICOT question, a literature search was performed using CINAHL, PubMed, and AHRQ evidence reports from 2016 to 2022. The strategy was to find studies most relevant to using standard education tools for recently diagnosed HF patients to prevent HF-related readmissions. Keywords used in the search were as follows: Health literacy, hospital

readmissions, HF education, transitions of care, and HF readmission reduction interventions. The databases yielded over 7,00 articles due to the broad word search used. The research was then narrowed down to focus on health literate HF education and hospital readmissions. Ten articles related to the PICOT question were identified. Four of the ten articles were relevant, providing high-quality data and background information to support the need for a standard, health-literate HF education to help reduce HF readmissions. The Johns Hopkins Nursing Evidence-Based Practice appraisal tool (JHNEBP) was used to evaluate and rate each of the studies and the application of the findings to the PICOT question (Appendix A).

Review of the Literature

Caluya Jr. (2021) studied the impact of educational intervention in reducing 30-day heart failure readmissions. In this quality improvement project, nurses were trained in HF education and applied teach-back methods toward patient teaching, decreasing HF readmission rates after implementation. This project did not utilize standard patient education tools but a standard teach-back method for educating patients. Nurses were trained to use the teach-back method to assess patients' comprehension of the disease and symptom management. As a result, there was a 21.4% reduction in hospital readmission rates after the educational interventions were implemented on the unit.

An enhanced patient-centered educational program for HF self-care management in sub-acute settings was the focus of the evidenced-based practice project by Gonzaga (2018). Results suggest that HF education on self-care management improved quality of life and self-management. The larger sample size for this study could have been beneficial to validating that HF self-care management can positively impact readmissions.

Mattina et al. (2021) performed a quality initiative to improve nurse education for HF patients using The Joint Commission (JTC) HF-1 standard for preparing patients for discharge. The HF-1 standard requires that all HF patients have six areas of HF management that need to be addressed before discharge: activity level, diet, discharge medications, follow-up appointments, weight monitoring, and symptom recognition (Regalbuto et al., 2014). Nurses received comprehensive HF education and applied the HF-1 standard for patient teaching. The data showed a statistically significant increase in HF education documented in the medical record with detail on the discharge topics and validated patient understanding.

In an observational cohort study by Cox et al., 2016, researchers studied the correlation between health literacy and healthcare utilization within 30 days post-discharge from the hospital for patients 18 years old and over diagnosed with HF. The findings from this study showed a high correlation between low health literacy and unplanned heart failure-related readmissions to the hospital. The researchers concluded a correlation between health literacy and healthcare utilization. There were 264 patients in the study, 175 in the adequate health literacy cohort and 89 in the low literacy cohort. Of the 175 patients in the adequate literacy cohort, 61 (34.9%) either were readmitted to the hospital or utilized the ED within 30 days. Of the 89 patients in the low literacy cohort that were followed for 30 days, 43 patients (48.3%) either readmitted back to the hospital or utilized the ED within 30 days.

Rationale

In HF patients, early recognition of symptoms and responding effectively to a change in condition can reduce the likelihood of hospital readmissions (Caluya Jr., 2021). In the situation-specific theory of HF self-care by Riegel et al. (2016), there are three core functions of the patient self-care process: Maintenance, symptom perception, and management. This

theory is a suitable framework for studying the positive clinical outcomes of standardized patient education. By referring to standard education tools, patients can identify and respond to changes in their condition.

The first phase of this theoretical framework is the maintenance phase. In this phase, daily monitoring and management of HF include medication, exercise, diet, and daily weight monitoring. The second phase is symptom perception, which monitors and identifies symptoms and distinguishes between normal and abnormal. In this phase, an effective tool can help patients understand how to respond based on the severity of the symptom. The third phase is management which would be the actionable response by patients based on symptom perception. The organization's HF stoplight tool is an effective resource for patient self-management and symptom identification.

Project Aim

This project aims to improve hospital readmissions by 2.3% and enhance the quality of HF education and care management for patients in the outpatient setting. The project charter completed at the outset of this quality improvement project describes the project AIMs (see Appendix B). This will be done by standardizing the education provided to all HF patients. A comprehensive HF education will be developed for the nurse case managers and standardized documentation templates and workflows to address patient concerns. The driver diagram illustrates the primary drivers related to this project: staff competency, patient education, and optimization of department operations (see Appendix C). Heart failure readmission rates will be monitored pre-and post-implementation to evaluate the effectiveness of the quality initiative.

Context

Setting

The ICM team works in the outpatient setting and leverages technical applications such as the electronic health record (EHR) to document patient interactions. There is variation in the telecommunications devices used among the team members. Some team members use mobile devices issued by the office, while others use computerized telecom applications. The variation in the tools is a challenge for transferring phone calls to team members and other departments across the healthcare organization. Team members work either in the physician's office or work from home. The ICM department's business hours are 8:00 am-4:30 pm, Monday through Friday. The office is closed on weekends and major holidays.

Heart failure patient education tools can be accessed online or printed out and available in physician offices. Creating standardized HF patient education tools aims to set a standard approach to patient care and ensure a comprehensive and consistent experience. Because team members do not work in a single location, standardized patient tools can be stored electronically in a single place on a shared network and virtually accessed by all. However, many RN CMs who work in the office still use outdated pamphlets and printed materials that are legacy resources, hence the need for a standard HF education handout.

Purpose

The ICM program aims to provide outpatient case management support to HF patients who need assistance with care coordination, connection to resources, medication management, and education to promote self-care management. Patients may also be referred to ICM by their provider or any member of the ICM team. ICM program enrollment is limited to patients who meet eligibility criteria.

Patients

All patients eligible to enroll in the HF case management program must have a diagnosis of HF, be age 18 years of age or older, and have a value-based insurance plan or have Medicare A and B insurance. Patients managed closely in an HF clinic are excluded from ICM services. Patients in hospice, palliative care, or other advanced illness programs are also excluded from ICM services.

Professionals

The professionals in the ICM team consist of registered nurses (RN), registered dieticians (RD), health coaches, and clinical service representatives (CSR). Each RN has additional case management training and education but does not require other certifications. The case management team wither works remotely or work in the care centers. Staff work either in Utah or California.

Process

The enrollment into the ICM program starts with a specialized report identifying HF patients recently discharged from the hospital. The non-clinical support staff outreaches to the patient to introduce the patient to the program and schedule an initial appointment with the HF care manager. The patient appointments are all conducted via telephone. The initial visit consists of assessing and evaluating the patient's current health, follow-up appointments, medication review, and resources needed. An individualized care plan is created. Based on the patient's acuity, the HF case manager will follow the call-frequency protocol and continually assess the patient's progress and eligibility for the program. Patients are discharged from the program when goals are successfully met and they demonstrate appropriate self-management.

Patterns

There is a lack of standard work for managing HF patients in this microsystem. The anatomy of the patient call includes patient assessment, medication review, follow-up appointments, and connection to resources. However, within each of these patient topics, there is variability in what is documented and does not clearly communicate what was done for the patient and what specific follow-up is needed. In a random assessment of 20 HF patient charts, eight of the charts did not have any documentation on what was reviewed explicitly with the patient and any remaining items that still needed to be discussed. Patient teaching should be communicated in the documentation so that other care team members know what was reviewed to prevent redundancy and improve efficiencies (Lewis et al., 2014).

Intervention

The intervention is to standardize patient education handouts for HF patients and operationalize utilizing these resources over four weeks. A Gantt chart depicts the timeline for this quality improvement project (see Appendix D). A clinical nurse leader (CNL) has the training, education, and competency to lead clinical improvements (King et al., 2019) and will be tasked to oversee the implementation timeline to train the team to utilize the standard guidelines and resources. The CNL as an educator is prepared to apply teaching strategies and use current information to train and educate healthcare professionals (AACN, 2007). The role of the CNL as a systems analyst/risk anticipator is the ability to evaluate systems data and identify potential risks. With the implementation of standard tools, the CNL can review the data and assess the impact of the changes. In addition, the CNL's expertise can support workflow and process designs to prevent patient harm.

Study of the Intervention

The microsystem system dashboard pulls all DCE patient data to observe hospital admissions trends, readmission rates, risk levels, and ED utilization. This dashboard will be used to monitor readmission rates pre-and post-implementation of interventions. The utilization of a standard documentation template will be monitored as part of the success measures. All HF patients enrolled in HF case management will be monitored for the duration of their enrollment into the program. Data points extracted from the system dashboard are the total volume of patients engaged in the ICM program, frequency of patient interaction with the case manager, and patient closure date. Surveys will be used to obtain feedback from the staff on utilizing a standard documentation template.

Measures

The goal is to reduce 30-day hospital readmission rates for HF patients in the microsystem by 2.3%. The data will be measured pre-and post-implementation of the interventions. The measurement strategies are included (see Appendix E). The microsystem sets annual readmission rate targets and thresholds based on past data and national benchmarks. The Q1 2022 readmission rate is at 11.9%, and the system target readmission rate goal is 9.6%.

The overall target measure for using a standardized HF documentation template is 100%. Upon enrollment into the ICM program, the case manager will be expected to educate all HF patients with the initial phone call and utilize the documentation template to demonstrate compliance with standardized work. With subsequent patient interactions, the case manager will be expected to refer to standardized education resources to reinforce teaching and assess the patient's knowledge and understanding. Patients can receive HF resources in the mail, in-person at the physician’s office, on the organization's official website, and secure messaging via online portals.

The balancing measure is to monitor the number of patient phone calls to the case manager within 30 days of enrollment. Patient call frequency is based on the acuity of the patient. Stable patients receive one call per week for a total of four weeks. Patients with higher acuity are escalated to the HF clinic or referred to their physician for an office visit. With the implementation of standardized education to promote self-monitoring of their condition, patient call frequency should not exceed four RN CM calls within 30 days of enrollment. Case management aims to provide education and information for patients to navigate the healthcare system and self-manage their care. By providing standard education tools, the objective is for patients to feel confident in identifying symptoms and when to seek the appropriate level of care if there is a change in condition.

Ethical Considerations

This quality improvement project meets the guidelines for an evidence-based change in a practice project. See the attached statement of the non-research determination form (Appendix F). It does not meet the criteria as a human research project based on the guidelines set by the Institutional Review Board. The anonymity of patients, personnel, the healthcare organization, and protected health information will be strictly maintained per the Health Insurance Portability and Accountability Act (HIPAA) of 1996. Patients enrolled in the ICM program have the right to decline services at any time.

Individuals living with HF can improve their quality of life with medication, diet, and exercise as prescribed by their physician (American Heart Association, 2017). Teaching patients self-care techniques and disease management aligns with provision 4 of the American Nurses Association (ANA) principle code of nursing ethics, in which nurses should act to make

decisions and take actions consistent with the responsibility to promote health and provide optimal care.

Outcome Measure Results

The outcome measure is to monitor 30-day hospital readmissions for those HF patients who meet the criteria for a post-discharge follow-up call. The HF readmission rate is calculated as the percentage of program patients readmitted back into the hospital within 30 days after discharge from the hospital. From May 10 to June 10, 2022, there were six HF patients enrolled and engaged in ICM services (Table 1). None of the six HF patients were readmitted back into the hospital within 30 days during the project time frame, thus achieving the target of less than a 9.6% readmission rate.

The process measure is the percentage of HF patients who received standardized HF education as evidenced by the utilization of the HF smart phrase in the EHR. The goal was to have 100% of all project participants receive standardized HF education with the corresponding HF smart phrase in their chart. Of the five HF patients enrolled in ICM services, two patient charts had the documented HF smart phrase (Table 1). In a thorough chart review of the remaining four patients, HF education was provided, as evidenced by a nursing note documented by the RN CM. However, the opportunity to apply the standard smart phrase was missed in these four cases. There is no evidence that these four patients were verbally directed to the organization's HF public website, which is a critical part of the HF smart phrase. The HF website has all the resources available to download, and some of the resources are offered in other languages.

The balancing measure is the number of RN CM interactions with the patient within the project's timeframe. RN CM interactions should not exceed four phone calls per patient within a

4-week period after providing standard HF education and resources to the patient. Increased interactions could be correlated with the need for additional teaching or triage due to a lack of understanding of HF self-management. The purpose of HF education is for the patient to self-manage and identify symptoms to escalate to the next level of care appropriately. One patient with the documented HF smart phrase during the project period had five interactions (Table 1). The other interactions were due to the inclusion of the patient's son to speak directly with the RN CM and receive the HF education on behalf of the patient.

Table 1

ICM HF Program Patients 5/10/22 – 6/10/2

Patient	Hospital admission diagnosis	Hospital discharge date	ICM enrollment date	HF smart phrase used?	Number of RN CM interactions	Hospital Readmission within 30 days?
A	Acute HF exacerbation	5/29/2022	6/9/2022	Yes	5	No
B	Acute systolic CHF	6/8/2022	6/10/2022	No	2	No
C	Atrial fibrillation and new-onset cardiomyopathy, diastolic HF	6/2/2022	6/7/2022	No	1	No
D	Syncope	5/13/2022	5/17/2022	No	4	No
E	COPD Exacerbation	5/14/2022	5/18/2022	No	2	No
F	HF exacerbation	4/26/2022	5/19/2022	Yes	4	No

Summary

The implementation of standard HF education resources provided the tools to offer quality care to HF patients enrolled in the ICM program. The RN CM team was engaged in the implementation and contributed valuable feedback to support efforts. Appointed physicians developed the standard HF education within the system as part of the overall strategy to address HF management. Heart failure education and resources are shared on the organization's website and accessible to the public.

Conclusions

The project demonstrated the use of standard HF education to improve the quality of care for HF patients post-discharge from the hospital. The project also allowed the ICM team to work directly with the HF system task force. This is a mutually beneficial relationship between the two teams to continuously improve, develop, and implement new processes for patient care. The training and education for the RN CM team members were comprehensive and provided visibility of overall strategic goals for managing HF across the system.

The project has an opportunity to extend to both hospital and ambulatory departments across the organization, including the emergency department. The standard HF smart phrase can be applied to patient notes and the after-visit summary, which are standard documentation forms used across settings. Additionally, this project could expand the patient criteria to be payer agnostic, a barrier identified in the narrow payer eligibility requirements outlined in the ICM department. With a broader patient population, this could help validate the effectiveness of using standard HF education. The standardized HF resources are publicly accessible and should be marketed for use for all patients who enter the system and not be limited based on criteria.

This project supports the CNL's core competencies in quality and safety, informatics, healthcare technologies, and interprofessional collaboration for improving patient and population health outcomes (see Appendix G). The alignment of the CNL with organizational strategies can help achieve system-level initiatives. The basis of this quality improvement project is an excellent template to replicate to initiate standardization of resources and tools to address other types of chronic conditions.

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Appendix A

Evidence Evaluation Table

Citation	Conceptual Framework	Design/ Method	Sample/ Setting	Variables Studied	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
Caluya Jr., J. (2021). Impact of educational intervention in reducing 30-day heart failure readmission. *MEDSURG Nursing, 30*(5), 309–313.	None identified	**Design:** Quality Improvement **Method:** Improve patient education interventions by increasing nurse's knowledge of HF self-management and use of teach-back method	**Sample:** 165 nurses trained, and only 148 surveys returned **Setting:** Four progressive care units in a 443-bed academic hospital in the southwestern United States	Nurses' knowledge of HF education and teach-back 30-day all-cause and HF-specific hospital readmissions	Impact of HF education on reducing 30-day HF readmissions. Increase in nurses' knowledge of HF self-care and teach-back methods	T-test for pretest/posttest changes in nurses' knowledge	Educational interventions can increase nurses' knowledge of HF self-care and the use of teach-back methods	**Critical Appraisal Tool & Rating:** JHNEBP Level 5 B **Strengths:** High percentage of nurses successfully learned HF education and teach-back methods **Limitations: The teach-back m**ethod requires ongoing training and coaching. HF discharge teaching is integrated with additional topics simultaneously.

Citation	Conceptual Framework	Design/ Method	Sample/ Setting	Variables Studied	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
Cox, S. R., Liebl, M. G., McComb, M. N., Chau, J. Q., Wilson, A. A., Achi, M., Garey, K. W., & Wallace, D. (2017). Association between health literacy and 30-day healthcare use after hospital discharge in the heart failure population. *Research in Social & Administrative Pharmacy, 13*(4), 754–758. https://doi.org/10.1016/j.sapharm.2016.09.003	None Identified	**Design:** Prospective Observational Cohort Study **Method:** To assess 30-day readmissions and emergency department visits based on health literacy evaluated by the BHLS (Brief Health Literacy Screening Tool) in an acute care heart failure population.	**Sample:** 300 patients enrolled/264 in final analysis Hospitalized English-speaking patients >18 years /diagnosis of HF confirmed by echocardiogram reachable by phone after discharge. **Setting**: A large hospital system in the U.S.	Adequate Health Literacy – Defined as a BHLS score >9 Low Health Literacy – Defined as a BHLS score ≤ 9 30-day healthcare expenditures after discharge	Association Between Health Literacy and 30-day all-cause ED visits and hospital readmissions. Tool: BHLS (Brief Health Literacy Screening Tool)	Univariate analysis for differences in low versus adequate health literacy based on collected covariates Chi-square test for nominal data T-test for continuous data	Low health literacy was associated with increased 30-day unplanned healthcare use after discharge. No association between health literacy and time to ED visits or readmissions within 90 days. Health literacy was not found to be an independent predictor of hospitalization.	**Critical Appraisal Tool & Rating:** JHNEBP Level 3 A **Strengths:** BHLS tool could help determine a patient's risk for readmission. **Limitations: Single-center** study that assessed the BHLS in the HF population only. Possible bias from pharmacy specialists. Health literacy of the caregiver was not collected. Low power in statistical analysis

Citation	Conceptual Framework	Design/ Method	Sample/ Setting	Variables Studied	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
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. https://doi.org/10.1016/j.apnr.2018.03.010	Expanded Chronic Care Model of 2003	**Design:** Evidence-based practice project **Method:** Implement and evaluate the effectiveness of a patient-centered education program for HF self-care management	**Sample:** A total of 20 HF patients **Setting:** Alaris at Cedar Grove, a 230-bed facility for long-term, sub-acute, and complex care units in Northern New Jersey	Self-Care of Heart Index v6.2 to measure self-care maintenance, self-care management, and self-confidence. Hospital readmissions	Determine Self-Care of Heart Index score for self-care maintenance, self-care management, and self-confidence	Descriptive statistics using the mean and the difference in pre-and post-test scores. Pearson's correlation for statistical significance for pre- and post-survey for self-care management, self-confidence, and self-care maintenance.	Results suggest that patient-centered educational programs can enhance self-care maintenance, self-care management, and self-confidence in HF patients	**Critical Appraisal Tool & Rating:** JHNEBP Level 5 B **Strengths:** Statistically significant data. Use of evidence-based tools. **Limitations:** Patient's knowledge of HF and health literacy. Small sample size.

Citation	Conceptual Framework	Design/ Method	Sample/ Setting	Variables Studied	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
Mattina, K., Dabney, B. W., & Linton, M. (2021). The impact of nurse education on heart failure readmissions and patient education. *Journal of Doctoral Nursing Practice, 14*(1), 56–63. https://doi.org/10.1891/JDNP-D-19-00076	Albert Bandura's self-efficacy theory	**Design:** Quality Improvement **Method:** Improve HF patient education by improving knowledge of nurses' HF discharge teaching and documentation of teaching in the chart.	**Sample:** All nurses assigned to the critical step-down unit. Total of 29 nurses. **Setting:** Midwestern Magnet recognized acute care hospital	Documentation of HF education in the patient's chart The percentage of patients who received HF discharge teaching	Effectiveness of HF education to unit nurses and its impact on HF discharge teaching as documented in the electronic record	Statistical analyses were conducted using the Statistical Package for the Social Services (SPSS). Chi-square tests were used for chart review on pre- and post-interventions. T-tests were used to determine the mean number of days education was provided to patients pre-and post-interventions	HF educational opportunities enhanced nurse knowledge and increased documentation of HF education in the patient chart	**Critical Appraisal Tool & Rating:** JHNEBP Level 5 B **Strengths:** Extensive education using Bandura's theory helped nurses progress through the four phases and successfully learn HF. **Limitations:** HF education is not standardized. Nurse participants were limited to one critical care step-down unit. Implementation. A larger sample size of patients could be beneficial.

Appendix B

Project Charter

Project Charter: Standardize heart failure patient education provided by the ambulatory case management team to prevent hospital readmissions.

Global Aim: To improve the quality of care to HF patients by using standardized documentation templates, patient education materials, and efficient workflows to manage patients in the ambulatory care setting.

Specific Aim: To reduce current HF readmissions from 11.9% to meet the organizational threshold of 9.6%. The national average HF 30-day readmission rate is 24% (Anand et al., 2018).

Background:

According to the National Resource Directory, heart failure (HF) is the second leading condition of 30-day hospital readmissions, only second to septicemia (Weiss and Jiang, 2018). HF is costly and projected to rise by 127% to $69.8 billion by 2030 (Virani et al., 2020). More than two-thirds of this cost is related to direct medical care. Managing HF patients effectively after discharge from the hospital can help improve the risk of 30-day hospital readmissions (Ruggiri et al., 2019).

Individuals living with HF can improve their quality of life with medication, diet, and exercise as prescribed by their physician (American Heart Association, 2017). Providing HF patient education can improve self-management of the condition and the patient's appropriate utilization of healthcare resources (Ruggiri et al., 2010). The goal of standardizing patient education resources and operational processes is to effectively manage HF patients to help reduce the risk of unplanned readmissions to the hospital.

Sponsors:

Vice President, Virtual/Telephonic Medicine	Dr. G. Bell
Medical Director, Population Health Services	Dr. K. Buss
Director, Integrated Care Management	D. Giberson, RN

Goals:

To provide standardized patient education to HF patients provided by the ambulatory case management team that includes the following:

1. Identification of HF patients eligible for case management using department criteria
2. Identify HF patient resources
3. Identify EBP for HF clinical management and patient self-management
4. Develop standard work for RNs to manage HF patients
5. Develop RN curriculum and training program

Measures

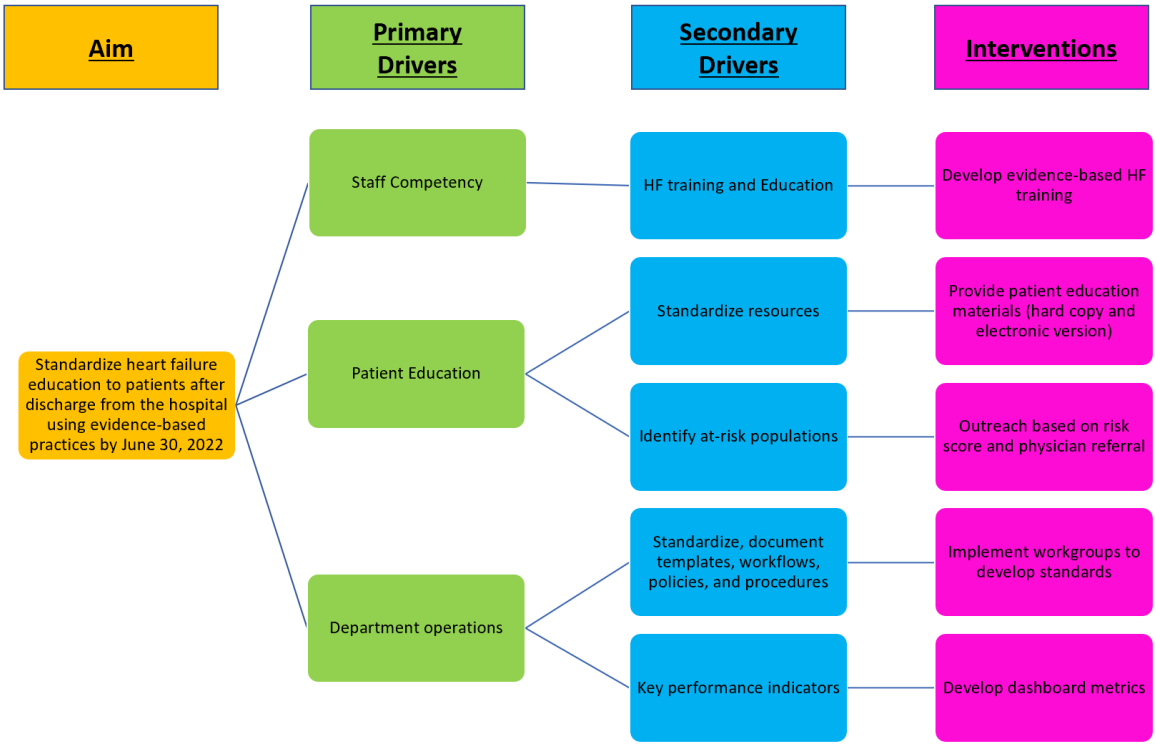
Measure	Data Source	Target
Outcome		
Reduce HF's all-cause hospital readmission rate by 2.3%. The current Q1 rate is at 11.9%.	Organization dashboard developed by data analysts	System target – 9.6%
Process		
% HF patients with documented use of standard RN template	Chart review	100%
Balancing		
No increase in the number of HF patient telephone visits	Organization dashboard developed by data analysts	< 4/month

Team:

RN Case Managers	East and West regional teams
LCSW	East and West regional teams
Pharmacists	East and West regional teams
Health care coordinators	East and West regional teams
Clinical service representatives	East and West regional teams
ICM leadership	L. Dimalanta, S. Jacobus

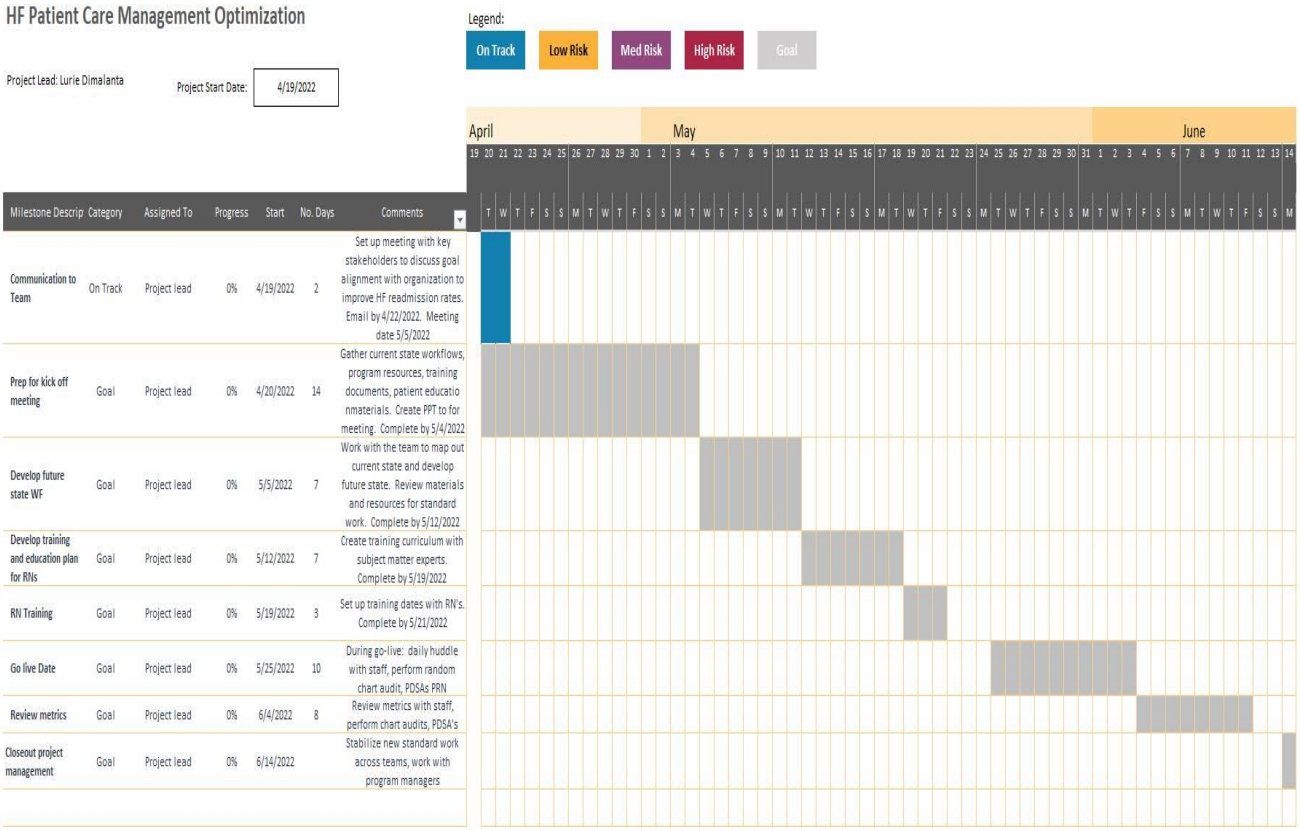
Appendix C

Driver Diagram



Appendix D

Gantt Chart of Project Timeline



Milestone Descrip	Category	Assigned To	Progress	Start	No. Days	Comments
Communication to Team	On Track	Project lead	0%	4/19/2022	2	Set up meeting with key stakeholders to discuss goal alignment with organization to improve HF readmission rates. Email by 4/22/2022. Meeting date 5/5/2022
Prep for kick off meeting	Goal	Project lead	0%	4/20/2022	14	Gather current state workflows, program resources, training documents, patient educatio nmaterials. Create PPT to for meeting. Complete by 5/4/2022
Develop future state WF	Goal	Project lead	0%	5/5/2022	7	Work with the team to map out current state and develop future state. Review materials and resources for standard work. Complete by 5/12/2022
Develop training and education plan for RNs	Goal	Project lead	0%	5/12/2022	7	Create training curriculum with subject matter experts. Complete by 5/19/2022
RN Training	Goal	Project lead	0%	5/19/2022	3	Set up training dates with RN's. Complete by 5/21/2022
Go live Date	Goal	Project lead	0%	5/25/2022	10	During go-live: daily huddle with staff, perform random chart audit, PDSAs PRN
Review metrics	Goal	Project lead	0%	6/4/2022	8	Review metrics with staff, perform chart audits, PDSA's
Closeout project management	Goal	Project lead	0%	6/14/2022		Stabilize new standard work across teams, work with program managers

Appendix E

Measurement Strategy

Background (Global Aim): To reduce HF 30-day hospital readmission rate by 2.3% by July 10, 2022.

Population Criteria: HF patients were recently discharged from the hospital. Patients must have a PCP within the defined medical group and have a managed care insurance product.

Data Collection Method: Readmissions data is a routine report pulled monthly by the data analysts. For standard work evaluation, data will be obtained by performing a chart review in the electronic medical record. During the go-live period, a chart review will be conducted for all HF patients who meet the RN interaction criteria starting May 10, 2022. After the initial go-live, a random chart review of 5 patients per week will be evaluated for compliance.

Data Definitions

Data Element	Definition
Heart failure patient	A patient with a diagnosis code of HF as defined in the system dashboard
Hospital discharge	A discharge from an acute inpatient event
Readmission	A non-elective admission within 30 days after a hospital discharge
Readmission rate	The readmission rate is the percentage of readmissions out of the number of hospital discharges.
Standard RN template	A pre-written documentation template can be pulled into the medical record to document the patient interaction.

Measure Descriptio

Measure	Measure Definition	Data Collection Source	Goal
HF readmission rate	Percentage of readmissions out of the number of hospital discharges	Organization dashboard	System target – 9.6%

Percentage of charts using the standard RN template for HF patients	N= # patient charts with standard RN template
	D=# total number of HF patients served
		Organizational dashboard	80%

Appendix F

CNL Project: Statement of Non-Research Determination Form

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CNL Project: Statement of Non-Research Determination Form

Student Name: ___**Lurie Dimalanta**_____

Title of Project: The Effect of Standardized Patient Education on 30-Day Hospital Readmissions for Heart Failure Patients in the Outpatient Setting

Brief Description of Project:

A) Aim Statement: Standardize heart failure patient education provided by the ambulatory case management team to prevent hospital readmissions.

B) Description of Intervention: Develop standardized documentation templates, patient education materials, and efficient workflows to manage patients in the ambulatory care setting.

C) How will this intervention change practice? This will improve clinical quality, patient satisfaction, and reduce overall cost of care

D) Outcome measurements:

1. Reduce HF all-cause hospital readmission rate from 11.9% to 9.6%
2. At least 80% of all HF patients will have received standardized patient education

To qualify as an Evidence-based Change in Practice Project, rather than a Research Project, the criteria outlined in federal guidelines will be used: (http://answers.hhs.gov/ohrp/categories/1569)

XX This project meets the guidelines for an Evidence-based Change in Practice Project as outlined in the Project Checklist (attached). Student may proceed with implementation.

XX This project involves research with human subjects and must be submitted for IRB approval before project activity can commence.

Comments:

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EVIDENCE-BASED CHANGE OF PRACTICE PROJECT CHECKLIST *

Instructions: Answer YES or NO to each of the following statements:

Project Title:	**YES**	**NO**
The aim of the project is to improve the process or delivery of care with established/ accepted standards, or to implement evidence-based change. There is no intention of using the data for research purposes.	x	
The specific aim is to improve performance on a specific service or program and **is a part of usual care**. ALL participants will receive standard of care.	x	
The project is **NOT** designed to follow a research design, e.g., hypothesis testing or group comparison, randomization, control groups, prospective comparison groups, cross-sectional, case control). The project does **NOT** follow a protocol that overrides clinical decision-making.	x	
The project involves implementation of established and tested quality standards and/or systematic monitoring, assessment or evaluation of the organization to ensure that existing quality standards are being met. The project does **NOT** develop paradigms or untested methods or new untested standards.	x	
The project involves implementation of care practices and interventions that are consensus-based or evidence-based. The project does **NOT** seek to test an intervention that is beyond current science and experience.	x	
The project is conducted by staff where the project will take place and involves staff who are working at an agency that has an agreement with USF SONHP.	x	
The project has **NO** funding from federal agencies or research-focused organizations and is not receiving funding for implementation research.	x	
The agency or clinical practice unit agrees that this is a project that will be implemented to improve the process or delivery of care, i.e., **not** a personal research project that is dependent upon the voluntary participation of colleagues, students and/ or patients.	x	
If there is an intent to, or possibility of publishing your work, you and supervising faculty and the agency oversight committee are comfortable with the following statement in your methods section: *"This project was undertaken as an Evidence-based change of practice project at X hospital or agency and as such was not formally supervised by the Institutional Review Board."*	x	

ANSWER KEY: If the answer to **ALL** of these items is yes, the project can be considered an Evidence-based activity that does NOT meet the definition of research. **IRB review is not required. Keep a copy of this checklist in your files.** If the answer to ANY of these questions is **NO**, you must submit for IRB approval.

*Adapted with permission of Elizabeth L. Hohmann, MD, Director and Chair, Partners Human Research Committee, Partners Health System, Boston, MA.

STUDENT NAME (Please print): Lurie Dimalanta

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Signature of Student: _____ **DATE** 4/13/22

SUPERVISING FACULTY MEMBER NAME (Please print): _____

Signature of Supervising Faculty Member _____ **DATE** _____

Appendix G

CNL Competencies

Quality Improvement and Safety:

1. Use performance measures to assess and improve the delivery of evidence-based practices and promote outcomes that demonstrate the delivery of higher-value care.
2. Perform a comprehensive microsystem assessment to provide the context for problem identification and action.
3. Implement quality improvement strategies based on current evidence, analytics, and risk anticipation.

Informatics and Healthcare Technologies:

1. Use information technology, analytics, and evaluation methods to:
    a. Collect or access appropriate and accurate data to generate evidence for nursing practice.
    b. Collaborate to analyze data from practice and system performance.
    c. Design evidence-based interventions in collaboration with the health professional team.
    d. Identify gaps in evidence for practice.
2. Use information and communication technologies to document patient care, advance patient education, and enhance the accessibility of care.

Interprofessional Collaboration for Improving Patient and Population Health Outcomes:

1. Facilitate collaborative, interprofessional approaches and strategies in designing, coordinating, and evaluating patient-centered care.
2. Assume a leadership role, in collaboration with other interprofessional team members, to facilitate transitions across care settings to support patients and families, and reduce avoidable recidivism to improve care outcome