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## Reducing the Incidence of Frequent Hospital Readmissions in Veterans Population

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**Reducing the Incidence of Frequent Hospital Readmissions in  
Veterans Population**

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This manuscript Partially Fulfills the Requirements for the

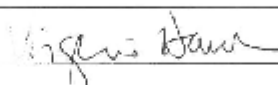
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Approved: August 17, 2024

**University of St. Augustine for Health Sciences  
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### Abstract

**Practice Problem:** Veterans hospital readmission problems are challenging, specifically in the heart failure department, which severely impacts the patient's health, mortality, family, and quality of life. Frequent readmissions increase the usage cost, hospital budget, and loss of time from providers to other veterans, and failure to meet the key guidelines of the Center for Medicare and Medicaid for improvement.

**PICOT:** The PICOT question that guided this project was, in veterans with heart failure and one or more frequent hospital readmissions discharged in the last 30 days(P), does the appointment of a dedicated discharge nurse practitioner as a coordinator(I), compared to standard discharge instructions (C), reduce the 30-day hospital readmission rate from the date of last discharge.

**Evidence:** Evidence strongly suggested and supported that the implementation of Transitions of Care Coordination with a multidisciplinary collaboration led by a nurse practitioner reduced the readmission rates within the 30-day period from the last discharge.

**Intervention:** The evidence-based interventions utilized with the appointment of a dedicated nurse practitioner as a discharge coordinator from the time of discharge to follow-up for 30-days while the patients are in their homes by contacting them via video, phone, text, and visiting the patient in person, and setting up follow-up appointments for primary care, specialty care while utilizing community charge nurse resources.

**Outcome:** Results showed a 10% reduction from 23% to 13% within a 30-day period in the heart failure department. The average readmission rate in the veteran's hospital ranged from 19% to 29%. This is a clear indication that this project has excellent future potential. Additionally, all eleven interventions were successfully implemented at a rate higher than 95%.

**Conclusion:** The project achieved a heart failure clinic readmission rate that was less than the hospital and national average. The reduction in the percent of 30-day readmissions was statistically and clinically significant between pre-transitional care and post-transitional care of heart failure veterans. The transitions of care 11 interventions were successfully implemented to standardize an evidence-based practice from the hospital to their home.

### **Reducing the Incidence of Frequent Hospital Readmissions**

Hospital readmissions are often painstaking, anxiety-creating feelings of apprehension. Veteran's hospital readmissions are costly and often life-changing events for some veterans. Veteran's readmission into the hospital frequently affects veterans, their families, and the hospital budget. Readmission sends awful feelings into the minds of veterans, and it burdens the veteran's hospital budget and other veterans due to the limited availability of beds in the hospital. Veteran hospital readmissions in the United States, especially in patients with high-risk and multiple diseases, cost more than \$17 billion annually (Griffin et al., 2021). The cost of readmissions in veterans' hospitals was in three major categories: myocardial infarction(MI) at \$3432, heart failure (HF) at \$2488, and pneumonia at \$2287. However, the average cost varies based on the veteran's hospital's geographic service area (Carey, 2016).

According to Liu (2015), in a facility-wide, the median adjusted 30-day all-cause including multiple diagnoses readmission rate was 21%, ranging from 12% to 29% in an interquartile range, among the high readmissions attributed to 11% for heart failure. The average readmission cost in a veteran's hospital was \$44,629, with 71% of the cost from in-patient care. LaBedz et al. (2021), the research and significant studies show that the clinical and economic burden of multiple diseases like heart failure and COPD in patient care is astronomical and will affect veterans and hospital human resources, providers, and budget. The purpose of this project was to prevent 30-day readmissions for adult veterans with heart failure. We applied the evidence-based Trac-C-C-C interventions. The outcome of this project demonstrated a substantial reduction in 30-day readmissions and allegorized the effectiveness of Transitional Care Coordination with multidisciplinary collaboration.

### **Significance of the Practice Problem**

Veteran's hospital readmission problems are challenging and plagued with multiple factors affecting the veteran's health and hospital. Readmission problems are long-standing issues; despite the best efforts of veteran administration programs like HRRP, hospital

community coordinators, and care clinic transitions, readmission issues persist (Griffin et al., 2021). Hospital readmission measures have been touted not only as a fundamental quality measurement but also as impacts on the cost of healthcare within the veteran's hospital system. Hospital readmissions are a significant problem in veterans' hospitals. They are costly, take away the valuable time of providers and nurses, put unnecessary strain on nurses, waste time and health resources, and take away the beds available from the veterans who really need them at that moment, often resulting from poor communication, lack of care coordination among the departments and providers (Stephens et al., 2013). In addition, hospital readmissions show a marker or yardstick of complex inefficiencies among the hospital administration, providers, and stakeholders, often reaching beyond the hospital's four walls into the entire community, resulting in low patient satisfaction (Stephens et al., 2013).

Reducing the readmission rates and improving the quality of care has long been the goal of the Veteran's Hospital. However, the reductions are taking place at a snail's pace with no apparent success. Recent data on readmissions shows that veterans older than 65 who seek care at local veteran's hospitals within 30 days stand at 16%, and 90-day readmission rates are at 28.6%, respectively. However, the readmission rate varies from location to location depending upon the veteran's hospital's geography (Stephens et al., 2013). Previous studies showed readmissions could be reduced or avoided by re-designing the hospital discharge policies or discharge methods by incorporating interdisciplinary teamwork and implementing an evidence-based transitional care model (Coleman et al., 2006).

This Veteran's hospital was associated with higher resource utilization due to frequent readmissions and poor outcomes. According to Liu (2015) Veteran's Hospital Health Service and Research & Development report, most veterans suffer from Heart Failure, COPD, HTN, DM2, ETOH, and drug abuse. According to Breckinridge (2019), the high cost of readmission and veterans' dissatisfaction will affect the entire community, including the reputation of the veterans' hospital. According to Senot & Chandrasekeran (2015), the lack of communication

between caregivers and patients has an immense impact on reducing readmissions. Liu (2015), in an internal Veterans Hospital research study, showed that the average cost of healthcare for readmission per patient was \$46,783, with 61% of the cost from in-patient care. In addition, the research pointed out that the cost of heart failure incidents per year in the total cohort incurred \$1.8 billion in a year. Veteran's hospitals attributed these higher costs to HF and COPD as the focus categories. Aggravating the existing readmission problem, the COVID-19 pandemic doubled the readmission challenges. Approximately 1 in 6 veterans discharged following COVID-19 hospitalization from March 1 through December 31, 2020, was readmitted within 90 days (Weaver et al., 2022).

### **PICOT Question**

The PICOT question that guided this project was: For veterans with heart failure and one or more frequent hospital readmissions discharged in the last 30 days, what is the impact of appointing a dedicated discharge coordinator, compared with standard discharge, in reducing frequent hospital readmissions within 30 days.

**Population:** Veterans with multiple chronic medical conditions in Long Beach, California. VA Desert Pacific Network 22 (VISN 22).

**Intervention:** Appoint a dedicated nurse practitioner as a discharge coordinator from the time of discharge to follow up for 30 days while the patients are in their homes by contacting them via video, phone, text, and appointment for primary care and specialty care.

**Comparison:** standard discharge instructions by nurse and hand delivery of discharge papers.

**Outcome:** Reduction of the hospital readmission of more than one admission within 30 days

**Timing:** within 30 days from the date of last discharge

### **Evidence-Based Practice Framework & Change Theory**

Evidence-based practice enables quality patient outcomes, reduces costs, and empowers all clinicians involved, known as the "quadruple aim in healthcare" (Melnik & Fineout-Overholt, 2015). In 2000, Sackett et al. stated that evidence-based practice is the conscientious use of current best evidence for making clinical decisions for the patient's best possible outcomes. In this paper, Johns Hopkins's evidence-based practice framework was incorporated into interprofessional team collaboration, which redefines the value of evidence-based practice. John Hopkins's evidence-based practice framework embeds (PET) practice questions, evidence, and translation, allowing providers to enhance care quality while reducing cost (Dang & Dearholt. 2022). Johns Hopkins's evidence-based practice philosophy was based on recognizing the practice problem, integrating research, and gathering evidence generated from outcomes (Melnik & Fineout-Overholt, 2015).

John Hopkins' evidence-based practice model framework correlates with the PICOT format, which emphasizes the available evidence-based practice problem and decides on the problem. The framework provided tools for evaluating research, including non-research evidence that translates into practice and application for best clinical decisions using internal/external factors, research materials like quasi-experimental, experimental, qualitative, expert opinion, clinical expertise, organizational experience, and patient preferences/values (Dang et al., 2022). The Johns Hopkins evidence-based practice uses PET; even though it emphasizes individual use, its well-developed tool kit provided the nurses with a guide for team-based concepts that search, appraise the strength of evidence, the feasibility of the intended change analyzed, an action plan was created, and changes were implemented (Christenbery, 2017).

### **Change Theory.**

A change theory is like a flow chart or diagram describing strategies, conditions, and resources that drive the change and culminate in the best outcomes (Reinholz & Andrews,



2020). According to Funnell & Rogers (2011). Lewin's theory of change is directly relevant to the existing practice problem at the veteran's hospital and frequent readmissions. According to Lewin's theory, institutional behavior is based on the equilibrium of two opposing forces, one for change and another for maintaining the status quo (Hannah et al., 2006). Lewin's change theory of management was used for this project. Lewin's change theory advocates a three-stage process, which is referred to as unfreezing, transition, and freezing. Individual behavior is not enough to be successful in Lewin's theory of change (Bashar et al., 2013).

Lewin's change theory and Johns Hopkins's evidence-based model complement each other in veteran hospitals. According to McFarlan, O'Brien, & Simmons (2018), collaboration is the best way to achieve change and implement evidence-based practice. Lewin's theory of change aligns with Johns Hopkins's evidence-based practice for better patient outcomes (Spetz, Burgess, & Phibbs, 2012).

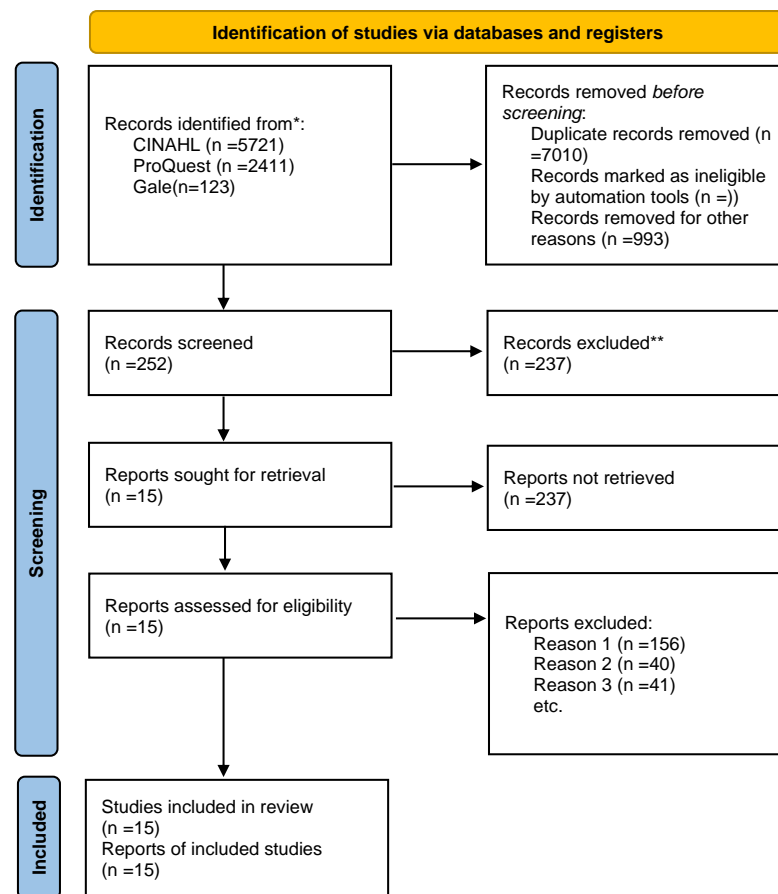
### **Evidence Search Strategy**

The purpose of the search process was to carry out a comprehensive review of the literature regarding how one or two readmissions into the hospital within 30 days from the last discharge affect the hospital resources and provider's available time and deny other veterans the opportunity to care due to lack of beds. A systemic and comprehensive literature search was utilized from the following University of St. Augustine Library databases: The Cumulative Index to Nursing and Allied Health Literature, CINAHL (Complete), PubMed, Gale, and ProQuest. The search strings/Keywords used *readmission within 30 days, veteran: 30-day readmission, 65 or older: hospital readmission within 30 days. 90-day readmission*. The literature search was limited to "peer-reviewed, full text only" and articles published from 2018 to 2023. The search yielded a total of 8,255 articles.

The following parameters were added to the search to narrow the findings: Peer-reviewed and published between 2018 and 2023. The Boolean Operator "AND" was also added to the search keywords: readmission or rehospitalization and 65 or older hospitalization in 30

days. As a result, the number of articles was reduced to 552. The inclusion and exclusion criteria were implemented to narrow down further for better search results. The exclusion criteria were utilized to remove the articles that did not correlate to the intended interventions to reduce the frequent readmissions in veteran hospitals. The exclusion criteria were non-VA hospital, single disease diagnosis, duplicates, and non-VA-associated research. In addition, full-text and peer-reviewed articles were manually reviewed for relevance to the PICOT question. A total of 400 articles were discarded to yield 15 articles.

Figure 1



## Reference:

Page, M. J., McKenzie, J. E., Bossuyt, P. M, Boutron, I., Hoffmann, T.C., Mulrow, C. D. et al. The PRISMA 2020 statement: an updated guideline for reporting *systematic reviews*. *BMJ* 2021;372: n71. doi: 10.1136/bmj. n71

### **Evidence Search Results**

The comprehensive search strategy utilized the databases of CINAHL, PubMed, ProQuest, and Gale for the crucial elements of the PICOT question. The extensive search yielded 5721 articles from CINAHL, 2411 articles from ProQuest, 123 from PubMed, and 123 from Gale. The Preferred Reporting Items for Systemic Reviews and Meta-Analysis (PRISMA) flow chart in the previous section on page 11 of the main paper presents a detailed description of the search process (Page et al., 2020).

Evidence search data is presented in the evidence table (see Appendix A and the summary of the systemic review table (see Appendix B). While the following parameters were added, exclusions/inclusions and Boolean Operator "AND" "OR" were added. Search keywords: readmission or veterans' readmission in 30 days, readmission or hospitalization, and 65 or older were applied. Another parameter was used to exclude unwanted or unrelated to veteran's readmission. A peer-reviewed inclusion criterion was added to the search parameter so that relevant articles could be utilized to determine veteran readmission rates.

The comprehensive search strategy generated 552 articles. Out of 552 articles, further exclusions were applied to be more relevant to veteran's readmissions. As a result, 300 articles were excluded. Using the USAHS library databases Gale 123, CINHL 20, ProQuest 50, and PubMed, 59 articles were identified, and a total of 252 articles were selected for review. After inclusion/exclusion, duplicates, and non-VA articles, 15 articles were selected for this evidence-based study.

The 15 articles selected for literature analysis using the Strength of Recommendation Taxonomy (SORT) to determine the strength and quality of individual studies and the recommendation based on the relevancy and body of evidence presented (Ebell et al., 2004). All articles were peer-reviewed and related to the PICOT question. This research used the Johns Hopkins Nursing Evidence-Based Practice Model (JHNEBP) level and quality grade tools to determine each article's strength (Dang & Dearholt, 2017). According to Johns Hopkins

Evidence-Based Nursing Practice (2017), evidence can be categorized into five levels, which are described in Appendix D and Appendix E of the Hierarchy of Evidence Guide (Dang & Dearholt, 2017). The quality of articles can apply level I for good quality like experimental, randomized control study (RCT), level II can be quasi-experimental, a combination of exploratory studies with or without meta-analysis, level III can be non-experimental and quantitative studies, level IV-V can be non-research articles including interviews, literature reviews, and opinions. In this study, seven articles were level I, four were level II, and four were level III. Most selected articles were based on randomized clinical trials, systemic reviews with or without meta-analysis, and retrospective cohort studies in hospital-related veteran readmission articles. Many selected articles were directly relevant to 30-day readmission into veteran's hospital with the diagnosis of HF, COPD, DM2, and multiple chronic diseases.

### **Themes with Practice Recommendations**

A critical analysis and literature synthesis using the Johns Hopkins Evidence-Based Practice (JHNEBP) recommendations tool and Appendix A and B discovered several themes. The JHEBP tool supported the process of identifying the common themes and the strength of evidence to steer the practice recommendation (Dang et al., 2022). The randomized clinical trials and cohort studies were synthesized for common themes based on 15 articles. The RCTs and Cohort studies indicate several common themes emerged (Chuan-Fen, 2015).

#### **Theme 1: Readmission Prediction Models**

The first theme from the analysis of literature pointed towards common factors embedded in veterans' populations, which are chronic multiple conditions, specifically HF and COPD diagnoses. The most common causes for the first theme are directed toward the lack of well-defined- interventions or methods designed explicitly for HF patients in hospital-wide systems. Multiple randomized studies showed that applying specific diseases like the HF readmission prediction model prevented readmission within 30 days. A particular prediction model is administered based on patient history, vulnerability, and the likelihood of readmission

(Zhang et al., 2023). The predictor's model was applied to gauge the probability of readmission within 30 days. One factor of the prediction model is using the patient home monitoring event notification to the provider using cell phone, text, and wearables to predict the readmission (Patel et al., 2023). During the prediction model application, there were factors like the lack of specific standardized heart failure exercise programs and a lack of weekly follow-up upon discharge (Liu, 2015). Even though readmissions are highly prevalent in veteran's hospitals, according to Kaboli (2012), there was a considerable decrease between fiscal years 1997 and 2010, totaling more than 129 VA Hospitals with 4 million patients. However, readmission within 30 days is costly and burdens the hospital system. The current readmission rate for HF is 21%, costing an average of \$46,783 a year, with 61% of the cost for in-patient care (Liu, 2015).

## **Theme 2: Transitional Care Coordination**

The second theme that emerged from the analysis of the literature is transitional care coordination for highly vulnerable patients suffering from COPD and HF. COPD is the second leading cause of readmission for the veteran population. Most RCTs and Cohort studies indicate that Transitional care coordination intervention is best suited for reducing readmissions within 30 days. The mean risk-standardized 30-day readmission for veterans stands at 15.3 % (11.8%-20.2%) in an average VA medical facility, which differs from facility to facility and geographic location (Apaydin et al., 2023). According to Apaydin et al. (2023), a 2018 assessment found that the veterans' hospital readmission rate for COPD within 30 days dropped from 18% to 8% with the COPD transitional care coordination care interventions.

A recent research study was conducted by a veteran's hospital team led by a pharmacist and managed by a registered nurse at a Middleton Memorial Veterans Hospital. The team created "COPD CARE." The intervention was very effective in the transitional care coordination team, which became a gold standard in that hospital. It was led by a pharmacist who received the patient for a 45-minute consultation and a nurse as an educator. The pharmacist provides COPD disease management and prescribed therapy, including medication, lab, and place

referrals. The team led by pharmacist and nurse managed COPD CARE (transitional care coordination) service by providing prescription medications like inhalers quickly, smoking cessation referrals, pulmonary rehab services to strengthen the lung capacity, and telehealth interventions, thereby reducing the COPD readmission rate from 18.4% to 0% within six months trial (Blank, 2019).

According to Dixon et al (2019), a care coordination method in a randomized clinical trial will prevent readmission within 30 days. Individual medical centers developed prevention methods like using cell phones for texting, care coordination groups, prediction of readmission models, remote monitoring, telehealth, MobiMD app, transitional care, and multidisciplinary team care coordination (Charteris & Punds, 2020). The second theme, Coordination of Transitional Care (C-TraC), became evident in reducing the readmission of veterans with multiple chronic medical conditions and heart failure (Dixon et al., 2019).

### **Theme 3: Multidisciplinary Care**

The third theme of the literature review pointed towards the multidisciplinary team interventions, which will reduce the readmissions within 30 days from the last discharge. A double-blind, peer-reviewed study showed that the team used multidisciplinary interventions with education methods called "teach back," self-care, and medication reconciliation reduced readmissions (Charteris, 2020). An interdisciplinary team consists of care from each department where the patient receives the care and follows the teamwork from discharge, case management, follow-up care, and using modern technology for communications like cell phones, text messages, reminders, and computer applications to speak with the patients.

### **Theme 4: Patient Education and Case Management**

A total of 15 articles did not supported much patient education and case management interventions in the Western Veteran's Hospital system. However, there is not much headway to improve the reduction of readmissions. Patient education and case management interventions are part of the other themes that vary from hospital to hospital within the Western Veterans

Hospital systems. In one double-blind, peer-reviewed study, patient education, self-care, and medication reconciliations reduced the readmission rate from 27% to 10.2% within 90 days. However, multidisciplinary methods were added to the PDSAR intervention, which added more strength to reduce the readmission rate (Charais, 2020).

The analysis of the 15 articles identified throughout the research points out that coordination of care after discharge until home arrival, multidisciplinary interventions, patient education, and medication reconciliations are better methods to reduce readmissions. Among all the themes presented in these 15 articles, the prediction models stand out with more correlation for reducing readmissions. In a point of consensus from 15 articles, the impact of social factors is not focused on causes for readmission. According to Wary (2021), taking into consideration social factors has potential benefits in reducing readmissions. Most of the veterans were dependent upon veteran's hospitals, and no family or lack of social support brings them back to the hospital irrespective of the disease process.

### **Practice Recommendations**

After thoroughly synthesizing the literature, we concluded that reducing the readmissions within 30 days from the last discharge to follow and implement the predictions model interventions and Transitions of Care Coordination (TraC-C-C) interventions will reduce readmissions in this Western Veterans Hospital. The transition of care coordination requires multifaceted, interdisciplinary, collaborative, and on-time interventions, which is the key to successfully reducing readmissions. Veteran's hospitals, in principle, follow Medicare and federal guidelines. However, it develops its guidelines based on the geographic location and specific hospital based on the patient population. The interventions for veterans' hospitals are based on EBP and are compatible with Johns Hopkins' evidence-based practice guidelines. The research underlines the critical importance of a patient-centered, holistic approach with a multidisciplinary, collaborative approach as the benchmark for successfully reducing readmissions (Kripalani et al., 2019).

### **Setting, Stakeholders, and Systems Change**

The project environment and setting were Southern California Hospital, which is considered a highly reputable teaching hospital with integrated regional healthcare systems, including primary care, specialty care, and emergency care. It also has seven locations with community-based health clinics. The setting of this medical facility has 453 staffed beds, including 85 spinal cord beds and 99 geriatric beds, and has more than 2,200 full-time employees. This hospital offers in-patient, outpatient, and emergency care, including dental, mental health, pharmacy, social work, and research activities. This medical center and community care clinics are the healthcare providers of choice for more than 50,000 patients in this geographic location (VA, 2023).

### **Mission and Values**

The organization's inherent mission and values are based on philosophy and core values. The organization's mission is to provide timely, exceptional, and quality medical services and improve the lives of veterans and their families, including caregivers and survivors of patient families. The organization's core values are based on "I CARE Values," including trustworthy, accessible, agile, innovative, accessible, and integrated. The driver of core values is performed by each medical center employee with integrity, commitment, respect, and excellence (VA, 2023). Providing high-quality, comprehensive care is this medical center's central theme, the most extensive integrated healthcare system in Southern California's geographic location (O'Hanlon et al., 2017).

### **Key Stakeholders**

The project's main objective was to reduce the 30-day readmission rate for Heart failure and COPD patients by carrying out an evidence-based project "called Transitions of Care" (TraC-C-C) Interprofessional care management model" administered by a Nurse Practitioner with two registered nurses creating a practice change. Organizational key leadership was established, including the CEO, chief nurse officer (CNO), chief of staff for medical services, chief of in-



patient services, nurse managers, and staff in collaboration and support. All key organizational leadership concurred with the need for change to reduce 30-day readmissions for Heart Failure and COPD patients. The other stakeholders included medical, allied services, respiratory therapists (RTs), Cardiology Cath lab technicians, patients, staff nurses, pharmacists, social workers, case managers, the project manager, and axillary services members (Patel et al., 2018).

### **Interprofessional Collaboration**

According to Kripalani et al. (2019), transitional care coordination with Interprofessional collaboration reduced the readmission of HF patients and is associated with lowering the cost. Heart Failure readmissions constituted a significant crisis in the veteran population, which leads to unsatisfactory outcomes and puts a burden on healthcare organizations in terms of care and costs. A randomized controlled study indicated that nurse practitioners led the team in educating the patients using a novel tablet, which reduced the 30-day readmission rate in heart failure patients (Breathett et al., 2018). Collaboration among the team of different departments, including pharmacists and nurse practitioners, reduced heart failure readmissions (Boykin et al., 2018). This project included organizational leadership, a nurse practitioner, a heart failure care team, a pharmacist, a case manager, a social worker, and a discharge educator. Transitional care with the Interprofessional collaboration model was appropriate for managing heart failure and COPD patients because it is patient-centered; self-care, medication regimen compliance, and communication with Interprofessional providers kept the patients from readmission (Mai Ba, 2020).

### **Systems Change**

The primary goal of the DNP project is to make formidable positive changes at the organization's micro-level (Cardiology Department) by implementing Transitions of Care Coordination led by a Nurse Practitioner with an Interprofessional collaboration care model. At the micro-level intervention, they propelled open communications among the Interprofessional

collaborations, resulting in Heart Failure patient's reduction of readmissions. Micro-level successful interventions opened the door for meso-system change and can be duplicated in COPD and other medical-surgical units across all units. The Meso-level successful intervention can be replicated at macro-level changes, affecting the entire healthcare organization.

According to Morkisch et al. (2020), transitional care coordination with high-intensity and multidisciplinary interventions effectively reduces readmissions, specifically among patients 65 years and over, which are composed of the most veteran populations.

A SWOT analysis was conducted for the project at the project site of the organization. An organizational analysis was conducted to identify the strengths, weaknesses, opportunities, and threats (Appendix D). The organizational strengths were exceptional in the organization's willingness to go the extra mile; stakeholders were eager to participate, and leadership, floor nurses, and administrative staff were willing to join hands to reduce the menace of readmissions, costing millions of dollars. The organization has the capacity to fund an excellent network, and leadership is accepting a challenge for the reputation of patient satisfaction and better outcomes. The organization sees a clear opportunity to improve patient satisfaction and decrease readmissions. Another opportunity is that the providers and staff members are willing to participate and use modern technology to reduce readmissions. The Analysis indicated the "All hands on the deck" scenario where every team member wants to join and succeed in the project.

The SWOT analysis also indicated a certain level of weaknesses. The philosophy of the organization and resistance to change do exist. Due to the organization's rigid hierarchy and cumbersome process with a highly bureaucratic nature, the process takes longer, and the participants are likely to lose steam for change. The Analysis presented a specific threat level due to the potential philosophy of organization change, accidental data loss, and insider data theft to turn off the change process.

### **Implementation Plan with Timeline and Budget**

The Project was implemented with a team of seven members led by a Nurse Practitioner. The patient readmission rates were reduced to 13% from 23% within 30 days. The project implementation successfully reduced readmissions (Liu, 2022). The project's vision was to improve readmission in the heart failure department with "Transition of Care (TraC-C-C) Coordination" with a multidisciplinary collaboration approach in the Cardiology department. The implemented project was a systemic approach to improve the readmissions and deliver care to heart failure patients within the confines of home with the coordination of a team led by a nurse practitioner and a multidisciplinary approach (Nelson & Staggers, 2018). At the end of the project, a binominal test was performed to ascertain the success or failure rate of the total subjects who participated, male and female, compared with pre-TraC-C-C and post-TraC-C. (Table 2).

### **Primary Objective of the Project**

The project's main objective was to execute a Transitional Care Coordination (TraC-C - C) team to reduce the hospital readmissions of heart failure patients in the clinic. A seven-member team led by a nurse practitioner includes a nurse educator (discharge planner), case manager, social worker, pharmacist, community care coordinator, and primary care provider. The short-term objective was to provide specialty training to nurse practitioners in heart failure clinics with the other members four weeks before the project started. The team reviewed and obtained baseline data about the patient's disease process in the heart failure clinic. The team collected data, applied risk stratification analysis, trained all members of their respective roles, including how the communication will flow among the team members and created all required templates and contact numbers, including emails, decided to meet bi-weekly meetings (mandatory), and nurse practitioner (leader) will collaborate with multidisciplinary departments.

The first phase of Transitions of Care Coordination (TraC-C-C) with a multidisciplinary collaboration approach in achieving the intended goals of ensuring high-quality patient-centered

care while decreasing hospital readmission rates. During the 1980s, Mary Naylor advocated a similar to the TraC-C-C model with different features (Naylor, 2000). The transition of care model uses a multidisciplinary approach to reduce costs and readmissions. Transition of Care Coordination led by a nurse practitioner team was the approach that best suited the veteran population who suffered from heart failure and were readmitted within 30 days.

Transitional care coordination with a multidisciplinary approach consists of multiple steps and multiple collaboration departments while the nurse practitioner leads the seven-member team. The TraC-C-C model has been implemented with multiple variations and settings in each veteran hospital throughout VA geographic locations. The TraC-C-C model is based on five core concepts at the current project location. The five-core concept is illustrated in (Figure 2) and starts with the admission day assessment led by a specially trained nurse practitioner in heart failure diagnoses, decides the complexity of care needed, completes the template, notify the team, including patient PCP, and the notification goes automatically to the 7-member team, including PCP. 2. Day before the discharge nurse practitioner assesses the patient for patient needs at home, potential readmission assessment flag, notify readmission team including PCP and pharmacist for potential red flag about medication compliance. 3. Day of discharge: readmission assessment done by a nurse practitioner (potential red flags for readmission), notify (automatic text messages go out to all members) post-discharge nurse educator, pharmacist, case manager, social worker, and community care coordinator. 4. The patient is discharged after completing the nurse educator's instruction and handing over discharge papers with instructions, future PCP appointments, nurse practitioner phone numbers, and all team members for whom to call, where to call, or text whenever the patient wants to communicate. 5. Follow-up within 24 hours by nurse practitioner, pharmacist, case manager, and community care manager. Follow-up within three days by community care coordinator by visiting the home of the patient, pharmacist phone calls for medication compliance via phone call, WhatsApp, zoom conference, make future appointments with PCP by a member of the care coordinator and

follow-up within seven days by community care coordinator and notify the status of the patient and any potential needs to all members of the team. Continue the cycle every week and repeat the cycle for 30 days. During the 30 days, all the messages in the form of text and phone calls will be received by all the TraC-C-C team members, including the PCP. Transitional care coordination with multidisciplinary collaboration reinforces the satisfaction and feelings of the patient they care for. It also introduces patient-centered care from in-patient services to outpatient to the home environment (Radhakrishnan et al., 2018). The Transition of Care Coordination with multidisciplinary collaboration has significantly improved readmissions, patient satisfaction, and cost (Patel et al., 2018). A transition of Care Coordinator with an interdisciplinary model approach significantly reduced the readmission rates within 30 days (OR=0.512, 95% CI 0.392 to 0.668), including the cost (difference=\$3969, 95% CI \$5099 to \$2691)(Kripalini et al., 2019).

. The transitional care coordination (TraC-C-C) model showed a significant readmission reduction, including cost. Coordinated transitional care decreased from 21% to 15.8% within 30 days (Reese et al., 2019). A similar approach for reducing readmissions is based on the "prediction model with logistic regression" with data already in the patient's medical records. This model identifies the probability of readmission based on previous admissions and the patient's disease process. The veteran population consistently shows that they suffer from multiple chronic conditions like heart disease, COPD, DM2, and substance abuse, including mental health issues. The prediction model identifies those at high risk for readmission within 30 days of discharge. This model works with a multidisciplinary approach, specifically in the emergency department, because that is where most veterans will show up for readmission. This prediction and logistic regression model closely resemble the first part of transitional care coordination with a multidisciplinary collaboration approach. This model identifies the risk of readmission probability within 30 days. Using this model, Veterans Hospital emergency department case managers and providers can identify high-risk "frequent flyers" for early

interventions to reduce the emergency department, thereby reducing in-patient service readmissions. Proactive interventions can reduce the readmissions (Gao et al., 2018).

Lewin's theory of change is aligned with this project. Lewin's theory advocates that individuals or groups will most likely be influenced by restraining forces that perceive change as not good and demand to maintain the status quo. Yet, another group becomes the opposite and urges to move forward for change. Indeed, the Veterans Hospital is a prime example of two groups: one group wants to change, and the other wants to maintain the status quo. Lewin's change theory proposes a three-stage process: unfreezing, transition, and freezing. One individual behavior out of the entire group or leadership is not enough to be successful in Lewin's theory of change (Bashar et al., 2013). Lewin's theory of change is based on inter-collaboration and multidisciplinary efforts, just as this project is for success.

### **Project Budget**

The Transition of Care Coordinator with a multidisciplinary collaboration team project was considered a minimal and low-funding project concerning material, supplies, and equipment the hospital already owns. The workflow for all seven members required additional adjustments due to time availability and regular work hours in the hospital. The project had needed additional time for the team's nurse practitioner and registered nurses. Even though all members are hospital employees, this project used additional time to prepare regarding training, bi-weekly meetings, and responding to phone calls outside of working hours. The community care coordinator used additional hours to visit the patient's house for verification and documentation to send to the team on a 24/7 basis. The additional financial cost for this project was primarily based on overtime hours for nurse practitioner and registered nurses. The total cost for this project completion was \$17,780. This project budget cost illustration is provided in Table 1.

## Results

The EBP project's primary objective was to reduce the 30-day readmission rate of Heart Failure patients. At the end of 30 -the day period, by comparing pre-and post-intervention data, the project achieved a 10% reduction with 28 patients participating; the premise of the project for HF clinics to reduce readmission rate by implementing the "Transition of Care Coordination with multidisciplinary collaboration" led by the Nurse Practitioner team (TraC-C-C).

## Populations

The project participants' data was obtained from the hospital's electronic health records (EHR). Among the total 28 patients, 26 males and two females participated. The data inclusion criteria for the project study included primary diagnosis code for heart failure, demographics, gender, age between 40 years and above, and last discharge date. Under the exclusion criteria, patients with end-of-life diagnoses, hospice care, mental health, and patients enrolled in long-term care were excluded from the project. Before the project started, the project manager obtained the participants' written consent and an electronic signature by explaining their HIPPA rights and access rights.

## Data Collection

A data collection tool was used to track all the data from readmissions, and a comparison analysis was conducted between enrolled and non-enrolled patients (Appendix C). A total of 28 patients, 26 males and two females, participated. A binominal test was performed and resulted in a 10% reduction compared to 23% before the implementation and a statistical binomial  $p < 0.0000001$ :  $(3:28 \times 100 = 10\%)$  (Table 2). A data collection tool was used, prepared by a DNP student with the assistance of the evaluation team; oral or written permission was obtained to identify the participants (ID, last, first, gender, DOB) and track the beginning of the project implementation to the end of 30 days from the discharge from the hospital. The identifying information was de-identified to protect the privacy of the participants.

### **Categorization of Measures**

The categories of measures depicted in (Appendix G) were used during the project implementation. Post-intervention resulted in a 10% reduction in readmission for Heart Failure patients participating in the program.

### **Contextual Measures**

The contextual measure report describes the larger purpose or need for the study (Sylvia & Terhaar, 2024, p.103). The mean age of participants was 66 years in males and 42 years in females. A total of 28 patients, 26 males and two females, participated. The oldest patient was 70 years old, and the youngest patient was 49 years. The calculated mean age was 66.42, and the standard deviation was 8.19856. The participant's demographics are illustrated (in Figure 3).

### **The Process Measures**

The eleven process measures started with the nurse practitioner receiving an alert from in-patient services or ER, stating that the patient was being admitted. The nurse practitioner team visited the patient and assessed the patient with the team, which included the case manager, pharmacist, social worker, discharge nurse, community care manager, and nurse educator. The discharge planning process was started. The patient was followed every day until the discharge, and after the discharge, the team members followed up within 24 hours, 72 hours, every seven days, and a final follow-up was in 30 days. The process measures are often measured as nominal variables and represented as dichotomous statements, Yes or No. The eleven measures are depicted in (Appendix I). The interventions were measured as a percentage of completions for pre- and post-implementations until the end of 30 days from the hospital discharge and patient arrival at home (Appendix G).

### **Outcome Measures**

The hospital-wide readmission rate was 18.5%. The project reduced readmission rates from 23% to 13 %. The project results showed that a reduction of 10% was achieved for 30



days, with two patients readmitted out of 28 (Table 2). Sustaining continuous measures was adopted by the facility.

### **Impact on the Practice**

Implementing the "Transitional Care Coordination with Multidisciplinary Collaboration led by Nurse Practitioner Team" (TraC-C-C) project significantly impacted heart failure clinic patients. It reduced readmission rates by as much as 10% within 30 days. An average readmission cost was approximately \$27,000 to \$46,000, depending upon patient diagnosis and severity. The average length of stay was 5-7 days, costing roughly \$28,000 to 30,000. This project's results demonstrated that it could save up to \$900,000 for readmission costs alone. Lessons learned from 2020-2022, including the COVID-19 crisis, changed the philosophy of hospital leadership, joined forces with all stakeholders, and decided to continue the current project.

The new project's core values and interventions were aligned with the hospital's core values, mission, visions, and "I Care" values based on patient-centered holistic care (VA, 2015/2022). Before this project development, no specific models or methods were followed. Before this project development, no specific models or methods had been followed. Each department used its own models and ways, and there were no standardized methods within the hospital or individual department. Transitional Care Coordination with a multidisciplinary collaboration team led by a nurse practitioner program is designed to alleviate the current readmission rates. Successful care coordination team practice requires a combination of interventions, collective vision, responsibility, and interventions to correct deficiencies, empower the nurses and providers, and ultimately improve outcomes and reduce costs. (Ridwan et al, 2019).

This project implementation positively impacted and significantly reduced the readmission rate by 10% within 30 days, showing the leadership that this project can be implemented in other departments using the same pathways, increasing patient satisfaction and

reducing the readmission cost. Transitional Care Coordination with Multidisciplinary Collaboration led by nurse practitioners proved significant results, demonstrating that veterans can be treated effectively at home without coming to ER care or in-patient admission. A minor limitation found during the project implementation was sample size (n=28) and limited duration (30-day).

To ensure the sustainability of this successful program, the hospital leadership agreed to provide ongoing evaluations to keep progress going forward and review every month by the chief of in-patient admissions and the heart failure clinic. Additionally, the results generated by this project will allow leadership to recognize the importance of staff members' support for positive outcomes and continuous monitoring of interventions implemented to sustain and disseminate new ideas and practices throughout the hospital (Melnik & Fineout-Overholt, 2015).

### **Dissemination**

Dissemination of the project started from the day the outcomes were identified. The measures were evaluated and analyzed to ensure the project's effectiveness was optimized for the entire hospital system. Wilson and colleagues (2010) stated that the dissemination should go beyond traditional academic publishing in academic journals, books, meetings, conferences, and workshops.

The project results were disseminated to the organization's leadership, which sponsored the project. An invitation was sent with a flyer stating the purpose and goals of the presentation, and multiple posters and histograms with colors, charts, and flow charts, including a PowerPoint presentation, were used in town hall meetings and encouraged all members to open discussions, including all staff members. Results (Toolkit) were distributed among the departments and hospital-wide distribution for wider acceptance and submitted to the Western Veterans Hospital and the VISION 22 network of the Hospital. The organization supports designing and printing the project materials and publishing them on the hospital website.

Permission was requested from the leadership to publish on a government research website and disseminate nationwide veteran hospitals.

The project results were published in a public repository like [SOAR@USA.edu](https://soar.usa.edu), ProQuest, PubMed, CINHAL, and JHEBP for more in-depth discussion and to expand the research further with evidence-based practice.

### **Conclusion**

The goal of this project was to reduce the readmission rate for adult patients with multiple chronic medical conditions who were suffering from heart failure, COPD, and other comorbidities with emphasis on heart failure utilizing the Transition of Care Coordination with a multidisciplinary collaboration team led by a nurse practitioner (TraC-C-C) and using the Evidence-based practice model (JHEBP) along with a change theory framework based on Lewin's theory of change applied to reduce readmissions at heart failure clinic within the hospital environment. The literature review and analysis from 15 RCTs and SRs and retrospective cohort studies revealed commonalities and interrelations with the reduction of readmissions. The common themes presented an opportunity to develop the project using the evidence-based practice (JHEBP) project, Lewin's theory of change, and clinical practices. This project aligned with the organizational mission, vision, and objectives to care for a patient-centered theme called "I CARE," seeking further development of better patient outcomes, reducing readmission rate below 13% and cost.

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**Table 1***Project Budget*

Description of Line Items	Hospital Revenue Contribution	Total Cost
Nurse Practitioner Overtime	\$4890	\$4890
RN Over Time	\$2800	\$2800
Team Members Overtime	\$3890	\$3890
Materials & supplies	\$0	\$0
Team Members Training Over Time	\$6200	\$6200
Equipment	\$0	\$0
<b>Total Cost</b>	<b>\$17,780</b>	<b>\$17,780</b>

## Appendix A

Citation	Design, Level/ Quality Grade	Sample/ Sample size	Intervention Comparison (Definitions should include any specific research tools used along with reliability & validity)	Theoretical Foundation	Outcome Definition	Usefulness Results Key Findings
Zhang, X., Zhou, K., You, L., Zhang, J., Chen, Y., Dai, H., Wan, S., Guan, Z., Hu, M., Kang, J., Liu, Y., & Shang, H. (2023). Risk prediction models for mortality and readmission in patients with acute heart failure: A protocol for systematic review, critical appraisal, and meta-analysis. <i>PLoS ONE</i> , 18(7), e0283307. <a href="https://0b30in4ny-mp02-y-https-link-gale-com.prx-usa.lirn.net/apps/doc/A759141072/AONE?u=lrn55718&amp;sid=bookmark-AONE&amp;xid=e719477c">https://0b30in4ny-mp02-y-https-link-gale-com.prx-usa.lirn.net/apps/doc/A759141072/AONE?u=lrn55718&amp;sid=bookmark-AONE&amp;xid=e719477c</a>	Cluster Randomized trail  A	All Patient s with a history of HF  All adults	Team- based data extraction.  CHARMS Checklist and PRISMA-P	JHEBP Systemic reviews- Meta- analyses	Predictio n of readmis sion in acute Heart Failure	Significant correlation with AHF and readmissi on to Hospital. Perdition models useful
Dixon, B. E., Schwartzkopf, A. L., Guerrero, V. M., May, J., Koufacos, N. S., Bean, A. M., Penrod, J. D., Schubert, C. C., & Boockvar, K. S. (2019). Regional data exchange to improve care for veterans after	RCT/Cluster randomizer trail.  A	All veteran patients over	HIE, an event notification alerting	JHEBP Systemic cluster randomize	HIE notificati on intervent	The HIE- enabled notification has little

non-VA hospitalization: a randomized controlled trial. <i>BMC medical informatics and decision making</i> , 19(1), 125. <a href="https://doi.org/10.1186/s12911-019-0849-1">https://doi.org/10.1186/s12911-019-0849-1</a>		65/  Two veteran centers	providers for care coordination	r trial  Evidence-based data from 2 VA hospitals	ion did not stop or reduce readmission within 90 days	impact on care but is promising for the future.
Patel, M.S., Volpp, K.G., Small, D.S. <i>et al.</i> Using remotely monitored patient activity patterns after hospital discharge to predict 30-day hospital readmission: a randomized trial. <i>Sci Rep</i> 13, 8258 (2023). <a href="https://doi.org/10.1038/s41598-023-35201-9">https://doi.org/10.1038/s41598-023-35201-9</a>	RCT  A	n=500  Two hospitals Centers	Used wearable smartphones to monitor to reduce readmission	JHEBP model Database and remote monitoring	Reduce readmission to hospital within 30 days	Remote monitoring with wearables and smartphones reduced the readmission
Piette, J. D., Striplin, D., Fisher, L., Aikens, J. E., Lee, A., Marinec, N., Mansabdar, M., Chen, J., Gregory, L. A., & Kim, C. S. (2020). Effects of Accessible Health Technology and Caregiver Support Post Hospitalization on 30-Day Readmission Risk: A Randomized Trial. <i>Joint Commission journal on quality and patient safety</i> , 46(2), 109–117. <a href="https://doi.org/10.1016/j.jcjq.2019.10.009">https://doi.org/10.1016/j.jcjq.2019.10.009</a>	RCT  I/A	N=238  VA and two other hospitals	Used alerts, email, and text messages post-discharge to patients and providers	JHEBP model 11.4% readmitted from the intervention group, 17.9% from the control group	Care partner intervention reduced in chronic diseases like DM2, CAD	Promising results in COPD disease, promising but not effective in all chronic diseases
Charteris, E. J., & Pounds, B. (2020). A nurse practitioner-led effort to reduce 30-day heart failure readmissions. <i>Journal of the American Association of Nurse Practitioners</i> , 32(11), 738–744. <a href="https://doi.org/10.1097/JXX.0000000000000470">https://doi.org/10.1097/JXX.0000000000000470</a>	QI  II/ B	n=33 VA hospital-multidisciplinary departments	PDSAR methods used. A multidisciplinary team method	QI program Develop team-based practice collaboration to reduce readmission rates.	PDSAR model To reduce readmission by 1% within eight weeks	Promising and effective methods Total readmission reduced by 2% within eight weeks

Charais, C., Bowers, M., Do, O. O., & Smallheer, B. (2020). Implementation of a Disease Management Program in Adult Patients with Heart Failure. <i>Professional Case Management</i> , 25(6), 312–323. <a href="https://doi.org/10.1097/NCM.0000000000000413">https://doi.org/10.1097/NCM.0000000000000413</a>	QI/ Practice change/double-blind peer-reviewed  II/B	Hospital CCU unit military hospital environment 272-bed facility	Teach back methods, case management methods, and follow-up within 48-72 hours from discharge.	QI/practice change Evidence practice/case management with PT education	Readmission decreased from 27% to 10.2% during the 30 days	Multidisciplinary disease management can reduce 30-day readmission
Boockvar, K. S., Koufacos, N. S., May, J., Schwartzkopf, A. L., Guerrero, V. M., Judon, K. M., Schubert, C. C., Franzosa, E., & Dixon, B. E. (2022). Effect of Health Information Exchange Plus a Care Transitions Intervention on Post-Hospital Outcomes Among VA Primary Care Patients: a Randomized Clinical Trial. <i>JGIM: Journal of General Internal Medicine</i> , 37(16), 4054–4061. <a href="https://doi.org/10.1007/s11606-022-07397-5">https://doi.org/10.1007/s11606-022-07397-5</a>	RCT  I/A	n=694/ 2 VA centers  65 years or older	HIE and CTI models applied/ Health information exchange/Care transition intervention/evidence-based practice. Compare two groups.	Evidence-based RCT	The care transition intervention did not result in improved outcomes when compared to the Health Information Exchange alone.	There was no difference between HIE and CTI compared to HIE alone. More research is needed.
Patel, P. H., & Dickerson, K. W. (2018). Impact of Implementing Project Re-Engineered Discharge for Heart Failure Patients at a Veterans Affairs Hospital at the Central Arkansas Veterans Healthcare System. <i>Hospital pharmacy</i> , 53(4), 266–271. <a href="https://doi.org/10.1177/0018578717749925">https://doi.org/10.1177/0018578717749925</a>	Retrospective-cohort study  B/II	Veterans in the primary care section  n=100+50	Applied Reengineered discharge model to reduce readmissions	Multidisciplinary model with collaboration of primary care providers	Readmission decreased from 28% to 18% post-RED model	Promising RED model. Decreased readmission drastically

Wray, C.M., Vali, M., Walter, L.C. <i>et al.</i> Examining the association of social risk with heart failure readmission in the Veterans Health Administration. <i>BMC Health Serv Res</i> 21, 874 (2021). <a href="https://doi.org/10.1186/s12913-021-06888-1">https://doi.org/10.1186/s12913-021-06888-1</a>	Retrospective cohort study  B/II	Veterans and CMS data, 65 and over, older  n=1500	To see five social factors that affect readmission. Logistic regression analysis/Clinical variables	JHEBP model using c-statistics and CSM models	Lack of social support is associated with readmission	Consider social factors for decreasing readmissions. SDOH plays a major role
Kripalani, S., Chen, G., Ciampa, P., Theobald, C., Cao, A., McBride, M., Dittus, R. S., & Speroff, T. (2019). A transition care coordinator model reduces hospital readmissions and costs. <i>Contemporary Clinical Trials</i> , 81, 55. <a href="https://doi.org/10.1016/j.cct.2019.05.002">https://doi.org/10.1016/j.cct.2019.05.002</a>	Quasi-experimental study  B/II	Veterans with comorbidities  n=7038	Transitional Care Coordinator versus/usual care/two groups/post-discharge phone calls/discharge instructions	JHEBP TCC model team collaboration dedicated to follow-up care/ post-discharge instructions	OR=0.512, 95% CI 0.392 to 0.668. Significant lower odds of readmission in 30 days	Significant reduction when followed up by TCC and discharge instructions
Diehl, T. M., Barrett, J. R., Abbott, D. E., Cherney Stafford, L. M., Hanlon, B. M., Yang, Q., Van Doorn, R., Weber, S. M., & Voils, C. I. (2022). Protocol for the MobiMD trial: A randomized controlled trial to evaluate the effect of a self-monitoring mobile app on hospital readmissions for complex surgical patients. <i>Contemporary Clinical Trials</i> , 113, NA. <a href="https://doi.org/10.1016/j.cct.2022.106927">https://doi.org/10.1016/j.cct.2022.106927</a>	RCT  I/A	Veterans with surgical interventions and multiple diseases  n=300	Standard of Care versus SOC+ using the MobiMD app  MobiMD device used by patients to self-report and self-monitor post-intervention to reduce readmissions	JHEBP SOC+ Pt reports clinical data via the MobiMD app, which provides push notifications to providers.	Integrating Mobile apps such as MobiMD will reduce the readmissions because Pt is involved in self-care	It is highly recommended that the MobiMD app be used as it will benefit the patient, reduce readmission, and be part of transitional care.

Reese, R. L., Clement, S. A., Syeda, S., Hawley, C. E., Gosian, J. S., Cai, S., Jensen, L. L., Kind, A. J. H., & Driver, J. A. (2019). Coordinated-Transitional Care for Veterans with Heart Failure and Chronic Lung Disease. <i>Journal of the American Geriatrics Society</i> , 67(7), 1502–1507. <a href="https://doi.org/10.1111/jgs.15978">https://doi.org/10.1111/jgs.15978</a>	Multi-phase mixed method study  C/III	Chronic COPD/CHF patients  299	Used C-Track, Coordinated-Transitional Care/phone base/nurse intervention/discharge/phone/case mgt	JHEBP /Replicating Effective Programs (REP). C-Track program/Evidence-based practice	Used C-TraC Reduction of readmission. 54% of patients are less likely to be readmitted	C-TraC program is sustainable and reduces readmission and cost in the long run
Spece, L. J., Epler, E. M., Donovan, L. M., Griffith, M. F., Collins, M. P., Feemster, L. C., & Au, D. H. (2018). Role of Comorbidities in Treatment and Outcomes after Chronic Obstructive Pulmonary Disease Exacerbations. <i>Annals of the American Thoracic Society</i> , 15(9), 1033–1038. <a href="https://doi.org/10.1513/AnnalsATS.201804-255OC">https://doi.org/10.1513/AnnalsATS.201804-255OC</a>	Cohort study  B/II	Chronic COPD  n=2391	Comorbidities associated with readmission (COPD): did Pt receive corticosteroids during the index hospitalization?	JHEBP To see COPD exacerbation leads to lower quality of care, resulting in readmission.	Charlson index method used/associated with greater odds of readmission	COPD exacerbation and comorbidities associated with the likelihood of 30-day readmission. Fewer tx are good.
Gao, K., Pellerin, G., & Kaminsky, L. (2018). Predicting 30-day emergency department revisits—the <i>American Journal of Managed Care</i> , 24(11), e358–e364.	Retrospective analysis study  B/II	Veterans frequently visited the ED from 4 VA hospital	Developed predictive models for likely revisits of veterans to ED/  Split sample	JHEBP Data using predictive models and logistic regression	Three models used to predict frequent revisits to ED/model using	The predictive model measured by C-statistics is a better tool to predict

		s/ N=22,734	methods/ C-statistics		comorbidities provided better- predicting revisits	revisits to ED and prevent revisits
Takeda, A., Martin, N., Taylor, R. S., & Taylor, S. J. (2019). Disease management interventions for heart failure. <i>The Cochrane database of systematic reviews</i> , 1(1), CD002752. <a href="https://doi.org/10.1002/14651858.CD002752.pub4">https://doi.org/10.1002/14651858.CD002752.pub4</a> .	RCT/Cochrane database  A/I	Heart failure patients data from RCT/ Cochrane Database Syst Rev	Three intervention methods/To prevent readmission /multidisciplinary, clinic-based, case management/ Cochrane Database Syst Rev	JHEBP RCT database	Multidisciplinary intervention may reduce the readmission for heart failure.	Multidisciplinary interventions are better than clinic-based interventions to prevent readmission of heart failure patients.



## Appendix B

## Summary of Systematic Reviews (SR)

Citation	Quality Grade	Question	Search Strategy	Inclusion/Exclusion Criteria	Data Extraction and Analysis	Key Findings	Usefulness/Recommendation / Implications
Zhang, X., Zhou, K., You, L., Zhang, J., Chen, Y., Dai, H., Wan, S., Guan, Z., Hu, M., Kang, J., Liu, Y., & Shang, H. (2023). Risk prediction models for mortality and readmission in patients with acute heart failure: A protocol for systematic review, critical appraisal, and meta-analysis. PLoS ONE, 18(7), e0283307. <a href="https://doi.org/10.1371/journal.pone.0283307">https://doi.org/10.1371/journal.pone.0283307</a>	Cluster Randomized Trial <b>A</b>	Whether acute decompensate heart failure events can be predicted for readmission using models or specific comorbidities	Embase, PubMed, Web Science, and Cochrane database searches	Only original research peer-reviewed publication/acute decompensate heart failure/Secondary research, editorials, dissertations, conference proceedings	Two independent reviewers perform data extraction. Quantitative data on the predictor, performance measures	Predictive models were significantly correlated with Acute Heart failure, and readmission is closely related	Not all predictive models are useful for AHF. The lack of knowledge of what kind of model will help is unavailable in the literature. This systemic review enabled researchers to find which model will benefit AHF patients and prevent readmission. This systemic review allows clinicians to determine which mode is a good readmission predictor.
Dixon, B. E., Schwartzkopf, A. L., Guerrero, V. M., May, J., Koufacos, N. S., Bean, A. M., Penrod, J. D., Schubert, C. C., &	RCT/Cluster	Whether HIE event	Two VA hospitals	65 years and over	From 2 VA medical	Coordination of	This trial offered an excellent

Citation	Quality Grade	Question	Search Strategy	Inclusion/Exclusion Criteria	Data Extraction and Analysis	Key Findings	Usefulness/Recommendation / Implications
Boockvar, K. S. (2019). Regional data exchange to improve care for veterans after non-VA hospitalization: a randomized controlled trial. <i>BMC medical informatics and decision</i>	er rand omiz er trail.  A	notification is effective on health outcomes for older adults with acute care events/coordination of care	data extraction. Regional data exchange	only/user-only veterans and non-VHA providers/excluded all other categories of veterans	centers. Electronic medical records and within 90 readmitted veterans	care is key for the prevention of readmission and high-risk medication discrepancy during the care process	opportunity to examine the use of event notification that triggers a care transition intervention to have better outcomes in coordination of care
Patel, M.S., Volpp, K.G., Small, D.S. <i>et al.</i> Using remotely monitored patient activity patterns after hospital discharge to predict 30-day hospital readmission: a randomized trial. <i>Sci Rep</i> 13, 8258 (2023). <a href="https://doi.org/10.1038/s41598-023-35201-9">https://doi.org/10.1038/s41598-023-35201-9</a>	RCT  A	Prediction of readmission or death within 30 days	Hospital discharge records. Readmission records. Previously used readmission models for readmission. Remotely	Veteran, non-veteran diverse population. 47% were 50 or older, 53% were black, and 26% were Medicaid/Exclusion below 50 years.	Remote monitoring devices, smartphones, and wearables. Penn Medicine and database rehospitalization records.	Predicting 30-day hospital readmission significantly improved when remotely monitored	While using the readmission models for patient outcomes, the model allowing remote monitoring devices like smartphones, wearables for patient activities, and sleep patterns

Citation	Quality Grade	Question	Search Strategy	Inclusion/Exclusion Criteria	Data Extraction and Analysis	Key Findings	Usefulness/Recommendation / Implications
			patient monitoring data			patient data on activities were included.	should be incorporated for better outcomes.
Diehl, T. M., Barrett, J. R., Abbott, D. E., Cherney Stafford, L. M., Hanlon, B. M., Yang, Q., Van Doorn, R., Weber, S. M., & Voils, C. I. (2022). Protocol for the MobiMD trial: A randomized controlled trial to evaluate the effect of a self-monitoring mobile app on hospital readmissions for complex surgical patients. <i>Contemporary Clinical Trials</i> , 113, NA. <a href="https://0b30i40wg-mp03-y-https-link-gale-com.prx-usa.lirn.net/apps/doc/A692739489/AONE?u=lrn55718&amp;sid=bookmark-AONE&amp;xid=91cd17e5">https://0b30i40wg-mp03-y-https-link-gale-com.prx-usa.lirn.net/apps/doc/A692739489/AONE?u=lrn55718&amp;sid=bookmark-AONE&amp;xid=91cd17e5</a>	I RCT	Whether using MobiMD novel transitional care reduces the readmission in patients who had abdominal surgery	Patients admitted for abdominal surgery, surgical Oncology, and Colorectal surgery admitted patients.	Single hospital location only who had abdominal, colorectal, oncology only patient/all other categories excluded	Three categories of admitted patient's EHR extracted within a single institution	Using the MobiMD app, which notifies the providers as a push notification to patient smartphones	Using the MobiMD app helped the patient reduce readmission within 30 days to 90 days. The application of the MobiMD app significantly prevented or reduced unnecessary ER visits and hospital readmissions.
Piette, J. D., Striplin, D., Fisher, L., Aikens, J. E., Lee, A., Marinec, N., Mansabdar, M., Chen, J., Gregory, L. A., & Kim, C. S. (2020). Effects of Accessible Health Technology and Caregiver Support Posthospitalization on 30-Day Readmission Risk: A Randomized Trial. <i>Joint Commission journal on quality and patient safety</i> , 46(2), 109–117. <a href="https://doi.org/10.1016/j.jcjq.2019.10.009">https://doi.org/10.1016/j.jcjq.2019.10.009</a>	I RCT	Whether mobile phones/automated calls to Pts post-discharge can reduce the 30-day	Veterans hospital database and two other hospital post-discharge data	Pts with COPD, CAD, Pneumonia, and DM2/ Excluded all other diagnoses	Hospital admission/discharge records with electronic records from university hospital, VA hospital, and	Care partner intervention with automated and behavior	COPD diagnosis patients showed improved results for the prevention of 30-day readmission. P=0.026

Citation	Quality Grade	Question	Search Strategy	Inclusion/Exclusion Criteria	Data Extraction and Analysis	Key Findings	Usefulness/Recommendation / Implications
		readmission			community hospital	change calls did not improve 30-day readmission goals.	Results show promising for pulmonary diagnosis patients.
Charteris, E. J., & Pounds, B. (2020). A nurse practitioner-led effort to reduce 30-day heart failure readmissions. <i>Journal of the American Association of Nurse Practitioners</i> , 32(11), 738–744. <a href="https://doi.org/10.1097/JXX.0000000000000470">https://doi.org/10.1097/JXX.0000000000000470</a>	QI III	Whether by using the PDSAR model to reduce the readmission in HF veteran patients?	HER of VA hospital. A dedicated team formed with cardiology NP, Pharmacist, and dietitian w	Within a hospital with a multidisciplinary clinic/ no other patients involved	Data from HER of admission/discharge records from Multidisciplinary clinics	The readmission rate was reduced by 0.2% within eight weeks.	Implementing a dedicated, multidisciplinary HF clinic reduced readmission and showed promising results for patient-involved self-care goals.
Charais, C., Bowers, M., Do, O. O., & Smallheer, B. (2020). Implementation of a Disease Management Program in Adult Patients With Heart Failure. <i>Professional Case Management</i> , 25(6), 312–323. <a href="https://doi.org/10.1097/NCM.0000000000000413">https://doi.org/10.1097/NCM.0000000000000413</a>	II Double-blind, peer-reviewed	Can the readmission rate be decreased by following the teach-back method, self-care	Data from military teaching hospital patients. 90 days of data extracted from ambulator	HF clinic, CCU clinic, Ambulatory clinic. Cardiac, HF patients only. Ambulatory patient data is only	HER, discharge, and admissions records, and diagnoses for HF. 272-bed hospital data	The overall readmission rate decreased from 27% to 10.2% by	Shows that a multidisciplinary team for disease management can reduce avoidable 30-day readmissions by doing follow-

Citation	Quality Grade	Question	Search Strategy	Inclusion/Exclusion Criteria	Data Extraction and Analysis	Key Findings	Usefulness/Recommendation / Implications
		education, medication reconciliation, and multidisciplinary consultation?	primary care and HF clinic	available within the hospital complex.	analyzed. The hospital data management team extracted and collected ninety days of data.	implementing case management, multidisciplinary consultation, and medication reconciliation within 90 days.	ups, self-care education, phone follow-ups within 48-72 hours from discharge, and medication reconciliations.
Boockvar, K. S., Koufacos, N. S., May, J., Schwartzkopf, A. L., Guerrero, V. M., Judon, K. M., Schubert, C. C., Franzosa, E., & Dixon, B. E. (2022). Effect of Health Information Exchange Plus a Care Transitions Intervention on Post-Hospital Outcomes Among VA Primary Care Patients: A Randomized Clinical Trial. <i>JGIM: Journal of General Internal Medicine</i> , 37(16), 4054–4061. <a href="https://doi.org/10.1007/s11606-022-07397-5">https://doi.org/10.1007/s11606-022-07397-5</a>	RCT	Do healthcare information exchange, real-time notifications, and alerts to providers reduce veterans' readmissions, including	Two primary care veteran's medical center HER, admission records, discharge records, ER visits records. Sixty-five	65 years or older. Only those who received care from 2 facilities/ no other VA hospitals were involved.	Data from 2 VA facilities, ER visits, and non-VA acute care encounters.	By implementing HIE and CTI did not improve the readmission rate. The primary outcome	Additional interventions are needed despite the fact that HIE and CTI are being applied. If applied across the system could potentially reduce the 30-day, 90-day readmissions.

Citation	Quality Grade	Question	Search Strategy	Inclusion/Exclusion Criteria	Data Extraction and Analysis	Key Findings	Usefulness/Recommendation / Implications
		care transition interventions?	years or older only. 347 acute care encounters were used			e of 90-day readmission did not improve.	
Patel, P. H., & Dickerson, K. W. (2018). Impact of the Implementation of Project Re-Engineered Discharge for Heart Failure Patients at a Veterans Affairs Hospital at the Central Arkansas Veterans Healthcare System. <i>Hospital pharmacy</i> , 53(4), 266–271. <a href="https://doi.org/10.1177/0018578717749925">https://doi.org/10.1177/0018578717749925</a>	II	Whether 30-day readmission can be reduced by implementing Project Reengineered Discharge (RED)?	Single center of VA hospital only HF patients data with HER, discharge, admission data Analysis	Only HF exacerbation patients involved/No other medical center or other VA patients involved	A single-center HF with exacerbation data was analyzed with 100 patients. Pre-RED implementation and post-RED implantation data were analyzed.	30-day hospital readmission decreased from 28% to 18% during the implementation of RED project. P=.18	The coordination of care using discharge tools like RED should be utilized to improve patient outcomes and safety in the future.

Citation	Quality Grade	Question	Search Strategy	Inclusion/Exclusion Criteria	Data Extraction and Analysis	Key Findings	Usefulness/Recommendation / Implications
Wray, C.M., Vali, M., Walter, L.C. <i>et al.</i> Examining the association of social risk with heart failure readmission in the Veterans Health Administration. <i>BMC Health Serv Res</i> 21, 874 (2021). <a href="https://doi.org/10.1186/s12913-021-06888-1">https://doi.org/10.1186/s12913-021-06888-1</a>	II	Whether veterans 65 years or older have an increased risk for hospital readmission within 30 days associated with social factors like living alone, lack of social support, substance abuse, and marginal housing?	HER, chart reviews, CMS data from veterans hospitalized for HF. Using logistics regression analysis.	65 years or older only who hospitalized with HF	VA administrative and Medicare claims from the VA corporate warehouse. Veterans. Inpatient Medicare claims data was added to the analysis. Med PAR data was used during the analysis because veterans use Medicare programs.	Shows that social factors play a major role in hospital readmission within 30 days. Significant social risk factors are associated with HF patients.	Social risk factors might have potential benefits. However, more research is needed and applied throughout the VA system, specifically 30-day readmission outcomes.

Citation	Quality Grade	Question	Search Strategy	Inclusion/Exclusion Criteria	Data Extraction and Analysis	Key Findings	Usefulness/Recommendation / Implications
Ilani, S., Chen, G., Ciampa, P., Theobald, C., Cao, A., McBride, M., Dittus, R. S., & Speroff, T. (2019). A transition care coordinator model reduces hospital readmissions and costs. <i>Contemporary Clinical Trials</i> , 81, 55. <a href="https://doi.org/10.1016/j.cct.2019.02.002">https://doi.org/10.1016/j.cct.2019.02.002</a>	II A quasi-experimental study	Whether an appointing Transition of Care Coordinator will reduce the 30-day readmissions patients of CHF, COPD, Pneumonia,	EHR algorithm from those who were hospitalized with CHF, COPD	Only veterans admitted with CHF, COPD, or pneumonia are included. / All others excluded.	Data from the admitted patients using the EHR algorithm.	The TCC model significantly reduced 30-day and 90-day readmissions.	An evidence-based multi-component intervention by nurse TCCs reduced 30-day and 90-day readmissions associated with reduced cost.



Citation	Quality Grade	Question	Search Strategy	Inclusion/Exclusion Criteria	Data Extraction and Analysis	Key Findings	Usefulness/Recommendation / Implications
Reese, R. L., Clement, S. A., Syeda, S., Hawley, C. E., Gosian, J. S., Cai, S., Jensen, L. L., Kind, A. J. H., & Driver, J. A. (2019). Coordinated-Transitional Care for Veterans with Heart Failure and Chronic Lung Disease. <i>Journal of the American Geriatrics Society</i> , 67(7), 1502–1507. <a href="https://doi.org/10.1111/jgs.15978">https://doi.org/10.1111/jgs.15978</a>	III	Whether C-TraC program will reduce the 30-day readmission in CHF and COPD/ Using Replicating Effective Program to reduce 30-day readmission	Medical records from patients who were treated for CHF and COPD in a VA urban hospital	Only patient data belongs to CHF and COPD diagnosed in the VA hospital department. Hospital, department-wise inclusion/exclusion criteria	Data from EHR belongs to veterans from CHF and COPD. Admissions and discharge records from 299 patients analyzed	Participants were 54% less likely to be hospitalized (odds ratio: .46; 95% CI= .89	The program was financially sustainable. This program can be replicated throughout the VA hospital system. Reduces the readmissions and costs.
Spece, L. J., Epler, E. M., Donovan, L. M., Griffith, M. F., Collins, M. P., Feemster, L. C., & Au, D. H. (2018). Role of Comorbidities in Treatment and Outcomes after Chronic Obstructive Pulmonary Disease Exacerbations. <i>Annals of the American Thoracic Society</i> , 15(9), 1033–1038. <a href="https://doi.org/10.1513/AnnalsATS.201804-255OC">https://doi.org/10.1513/AnnalsATS.201804-255OC</a>	II Cohort study	Whether comorbidities were associated with readmission related to COPD exacerbation	Six veteran's hospitals. Data related to comorbidities like COPD affected hospital	Only six hospital patients' data about admission and discharge were collected from	Data from 2391 veterans from hospital admissions and EHR from six hospitals analyzed	Comorbidities are associated with 30-day readmission and mortality	When treating veterans with exacerbation of COPD, readmission is most likely within 30 days and can be prevented with proper

Citation	Quality Grade	Question	Search Strategy	Inclusion/Exclusion Criteria	Data Extraction and Analysis	Key Findings	Usefulness/Recommendation / Implications
			readmission.	electronic health records.		y	systemic corticosteroid treatment
Gao, K., Pellerin, G., & Kaminsky, L. (2018). Predicting 30-day emergency department revisits— <i>the American Journal of Managed Care</i> , 24(11), e358–e364.	II A retrospective study	Whether a predictive model using administrative data and logistics regression analysis will reduce the 30-day readmission	Data from 4 VA hospitals used EHR data retrieved 22,734 patients	Four hospitals administrative data, publicly available patient classification system. Logistic regression process	Data extraction from health records of four VA hospitals and their ER visits. Analyzed for revisits for 30-day	The predictive model showed 30-day readmission is likely if the patients have comorbidities. Used C statistics	This predictive model can be used to predict readmissions within 30 days. Specifically, these patients are called “Frequent Flyers”. This predictive model should be implemented in other hospitals in the future.

Citation	Quality Grade	Question	Search Strategy	Inclusion/Exclusion Criteria	Data Extraction and Analysis	Key Findings	Usefulness/Recommendation / Implications
Takeda, A., Martin, N., Taylor, R. S., & Taylor, S. J. (2019). Disease management interventions for heart failure. <i>The Cochrane database of systematic reviews</i> , 1(1), CD002752. <a href="https://doi.org/10.1002/14651858.CD002752.pub4">https://doi.org/10.1002/14651858.CD002752.pub4</a> .	I RCT	Whether comparing the effects of different disease management interventions for HF with standard care in terms of hospital readmission, cost, mortality	Searched CENTRAL, MEDLINE, Embase, and CINAHL	At least one hospital admission. Admission with a f/u within six months. Applied three interventions: case management, clinic-based interventions, multidisciplinary interventions	All patients with heart failure. One follows up within six months. Used standard methodological procedures expected by Cochrane.	There are minimal findings on the effects of disease management programs. Limited results on readmissions due to HF. Case management has more potential.	Multidisciplinary interventions may reduce the risk of readmissions for heart failure. Case management interventions were of limited benefit. Improved reporting in future trials would strengthen the evidence for these patient-relevant outcomes.

## Appendix C

## Data Collection Tool for Evaluation

Contextual Data					Interventions					Readmission Data			
1	ID	Age	Gender	Pt Admitted/ Y/N	NP assessed/Disc Y/N	Day of D/C. Y/N	Day of D/C, Pharmacy/nur Y/N	Day of D/C, edu/DC Y/N	F/U by in 24 hours NP/Pharmac y/Community Care - C/Social worker/Alert Y/N	F/U in 72 hours by CC/CM/ alerted Y/N	F/U in 7 days/Phar macy /SW/CM/C CC/Alerte d team Y/N	F/U in 30 days NP/CM/CCC/ Pharmacy/Ale rted/Red flags/Alerted team Y/N	Readmission within 30 days/alerted team and PCP. Y/N
2				Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N
3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
4	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
6	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
7	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
8	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
9	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
10	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
11	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
12	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Age: 2=48-49 years , 3=57 years , 2=59 years , 2= 60 years , 6=65 years , 6=75 years ,5=68 years ,2=78-79 years : Male=26. Females=2

**APPENDIX D****S W O T Analysis**

<p style="text-align: center;"><b>Strengths (Internal)</b></p> <ul style="list-style-type: none"> <li>* Organization willingness</li> <li>* CEO, Chief of Department support</li> <li>* Nurse managers support</li> <li>* Staff support</li> <li>* Stakeholders knowledge, network, skills, finance, and reputation support</li> <li>* Patient support, sufficient equipment, sufficient technology, funding, and location</li> <li>* Competing for patient satisfaction and better care outcomes for all veterans</li> </ul>	<p style="text-align: center;"><b>Weaknesses (internal)</b></p> <ul style="list-style-type: none"> <li>* Organizational philosophy</li> <li>* Resistance to change</li> <li>* Wanted to maintain the status quo.</li> <li>* Cumbersome</li> <li>* Rigid hierarchy</li> <li>* Highly bureaucratic</li> <li>* Takes a long time to make decisions</li> <li>* Lack of initiative from the organization</li> <li>* Lack of motivation from staff and providers</li> <li>* Not willing to take chances to improve</li> </ul>
<p style="text-align: center;"><b>Opportunities (External)</b></p> <ul style="list-style-type: none"> <li>* Trends towards decreasing readmissions.</li> <li>* Apply research used in other hospitals.</li> <li>* Apply Medicare research data.</li> <li>* Utilize modern technology to gather data.</li> <li>* Utilize the available government funding.</li> <li>* Tap into another research study from different locations, such as veterans' hospitals.</li> <li>* Maximize the providers, and staff's knowledge and skills.</li> <li>* Make it feel like all stakeholders are part of the success.</li> </ul>	<p style="text-align: center;"><b>Threats (External)</b></p> <ul style="list-style-type: none"> <li>* Organizational philosophy change</li> <li>* Accidental data loss</li> <li>* Insider data theft</li> <li>* External attacks on network and data</li> <li>* Regulatory changes from the secretary of the VA</li> <li>* Political changes and effects on the organization</li> <li>* Political pressure on local VA hospital CEO</li> </ul>

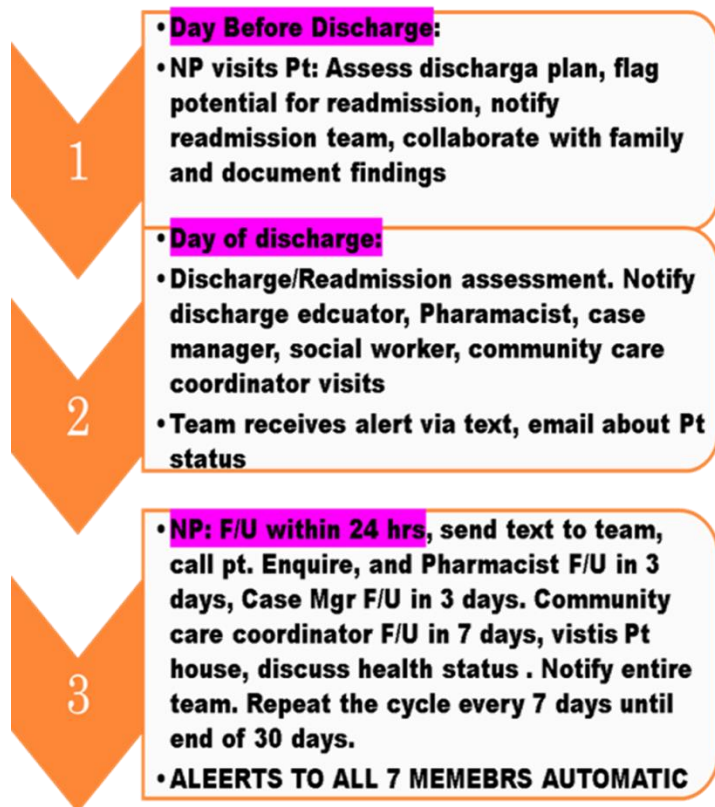
**Appendix E****Heart Failure Clinic Admission Data and Alert Note to all team members.**

Patient Name: God, Note: DOB: 1-1-2000. Date of Admission: 1-2-2000 Source of Record: CPRS, HER, patient, family member, caregiver, social worker notes
Previous admissions diagnoses, records, dates: CPRS, LABs, X-ray records, discharge notes Previous ER admission diagnoses records: EHR. Previous In-patient diagnoses admissions records: In-patient services, CPRS system Previous discharge summaries: CPRS, ER, discharge notes Previous In-patient stays: Review CPRS, ER notes, and discharge notes
PCP: Dr. Godsend Cardiologist: Expert Cardiologist
Where the patient came from: Home or Outpatient admission. Previous Doctor discharge note: Look into CPRS, ER notes, Labs, Red flags. Previous Discharge from In-patient service: EHR, CPRS, discharge notes, red flags Where is the patient going? Home? Nursing Home? Homeless Shelter? Live with family? Potential readmission? Based on decisions made by PCP, cardiologist, and diagnoses,

Figure 2

**HEART FAILURE****Admission Day: Do This First:**

1. Nurse Practitioner Assessments: Decide on the complexity and use the computer-based template. Notification to all members of the team is automatic

**READMISSION TEAM**

**Table 2****Binomial Test for Pre- and – Post TraC-C-C with Multidisciplinary Collaboration led by NP.****Estimated plan of readmissions reduction post-TraC-C-C implementation**

30-day readmission red-flagged?	Pre-TraC-C-C-M <i>n</i> =30	Post- TraC-C-C-M <i>n</i> =28	<i>P</i> =value
Yes	23%	13%	$p<0.00000001$
No	95%		

The binomial test will determine and compare the readmission rates before and after the project completion between group 1 participants (*n*=30) and group 2 participants post interventions (*n*=28).



## Appendix F

### Project Schedule

	N	U	R	7	8	0	1	N	U	R	7	8	0	2		N	R	7	8	0	3
	Week 1-5	Week 6	Week 7	Week 9	Week 11	Week 13	Week 15	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11
Meet with preceptor	X																				
Review literature	X	X	X																		
Prepare project proposal			X	X	X	X															
Submit the project to EPRC for approval.							X	X	X												
Identify the NP leader and team/process									X												
Identify data collectors									X												
Obtain baseline data									X												
Explain the project process.										X											
Explain the process to all team members.										X											
Meeting with leadership										X	X	X									
Meeting stakeholders													X								
Meeting charge nurses													X								
One more review process													X								

Meeting all clinic leaders before implementation														X	X	X	X	X	X	X	X
Implement process																X	X	X	X	X	
Collect data and evaluate																X	X	X	X	X	
Report to leadership the results and seek feedback																	X	X	X	X	

## Appendix G

### Evaluation Plan for Reducing 30-Day Readmissions among Heart Failure Patients

**Project Design:** Pre-implementation plan based on EBP to reduce readmissions.

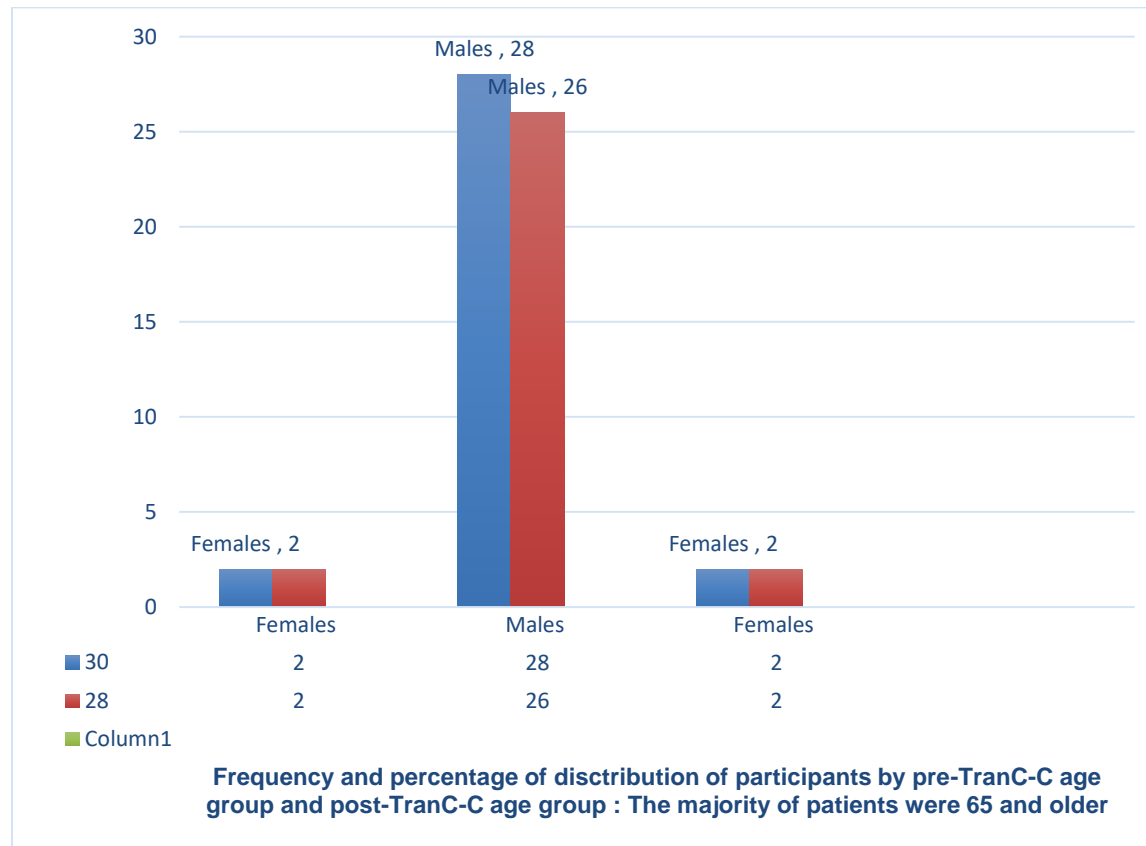
Measures	Categories					Data Collection		Criteria		Clinical Goals		Baseline Data		Project Goals		Time
Metrics & Name	Process	Balancing	Financial	sustainability	Context	Baseline	30 days	P= Value other	Other tests	Expected clinical goals		Values		Intended Project goals		30 days
30-day readmission rate	x			x	x	x	x			x		x		<13%		x
NP team assessment on the day of admission	x					x	x			x		x		x		x
Post assessment Alerts to the team	x				x	x	x			x		x		x		x
A day before discharge, assessment by NP pharmacist and team	x				x					x		x		x		x
Discharge teaching and social worker assessment	x					x	x			x		x				x
Pharmacist teaching and	x					x	x			x		x		x		x

medication compliance																
Post-discharge f/u within 24 hours by NP/Community Coordinator	x					x	x			x		x		x		x
F/U by pharmacist and community care coordinator within 72 hours	x					x	x	x			x		x		x	
F/U by NP in 7 days/Alert team/red flag if need	x					x	x	x			x		x		x	
F/U in 30 days by NP and community care coordinator	x					x	x	x			x		x		x	
Provided phone numbers and appointment information to patients by CCC/Alert	x					x	x	x			x		x		x	
F/U repeat for 30 days cycle by team and PCP	x					x	x	x	<0.01		x		x		x	



**Figure 3**

**The Frequency and Percentage Distribution of Participants by Pre-Tra  
C-C-C Age Group and Post-TranC-C-C**



Age: 2=48-49 years , 3=57 years , 2=59 years , 2= 60 years , 6=65 years , 6=75 years ,5=68 years ,2=78-79 years : Male=26. Females=2

Total participants: 28: Mean average=65.7857: Median=(65+65)/2=65: Mode: 65.75: SD: 8.22083: Variance: 76.5820: Population SD: 8.0726:

**Figure 4**

Readmission Rates for Two Different Intervention Groups:

Pre-TranC-C and Post-TranC-C interventions: Higher Bar Presents No Intervention

