

University of Texas at Tyler

Scholar Works at UT Tyler

MSN Capstone Projects

School of Nursing

Fall 11-21-2021

Evidence-Based Follow-Up Care for the Cardiac Patient: A Benchmark Project

Natalie E. Kelley

University of Texas at Tyler, nmcquiston@patriots.uttyler.edu

Follow this and additional works at: https://scholarworks.uttyler.edu/nursing_msn



Part of the [Nursing Commons](#)

Recommended Citation

Kelley, Natalie E., "Evidence-Based Follow-Up Care for the Cardiac Patient: A Benchmark Project" (2021). *MSN Capstone Projects*. Paper 125.
<http://hdl.handle.net/10950/3788>

This MSN Capstone Project is brought to you for free and open access by the School of Nursing at Scholar Works at UT Tyler. It has been accepted for inclusion in MSN Capstone Projects by an authorized administrator of Scholar Works at UT Tyler. For more information, please contact tgullings@uttyler.edu.

Evidence-Based Follow-Up Care for the Cardiac Patient: A Benchmark Project

A Paper Submitted in Partial Fulfillment of the Requirements

For NURS 5382: Capstone

In the School of Nursing

The University of Texas at Tyler

by

Natalie E. Kelley, BSN, RN, CCRN

December 5, 2021

Contents

Acknowledgments

Executive Summary

Implementation and Benchmark Project

1. Rationale for the Project
2. Literature Synthesis
3. Project Stakeholders
4. Implementation Plan
5. Timetable/Flowchart
6. Data Collection Methods
7. Cost/Benefit Discussion
8. Discussion of Results

Conclusions/Recommendations

References

Appendix

Acknowledgments

This master's degree would not be possible without the support, guidance, and encouragement of many people. I would like to acknowledge Dr. Danice Greer, Dr. Pamela Lake, Dr. Barbara McAlister, and Dr. Katherine Hensley, without whom I would not have completed my Master of Science in Nursing Administration. I would like to thank my parents and stepparents for their unconditional support and love. I express my sincere gratitude to my mother for being a role model and inspiring me to pursue an advanced degree. I am grateful to my best friend Tessa Thomas for providing insightful feedback, offering support, and consistently encouraging me each semester. I owe my deepest gratitude to my husband, Nick, whose unwavering love, kindness, patience, and grace provided me with the strength to complete this degree. Finally, I would like to thank my Lord and Savior, Jesus Christ, in whom all things are possible.

Executive Summary

Since the implementation of the Affordable Care Act (ACA) in 2012 and the Hospital Readmission Reduction Program (HRRP), hospitals and organizations have been encouraged to improve care coordination to reduce the number of avoidable readmissions (CMS, 2020). Three of the six publicly reported condition or procedure-specific 30-day risk-standardized unplanned readmission measures in the HRRP are cardiac-related: heart failure, acute myocardial infarction, and coronary artery bypass grafting (CMS, 2020). Although guidelines call for structured follow-up in patients with cardiac diagnoses after a hospital admission, just over half of admitted patients are being scheduled for follow-up (Goyal et al., 2016; Heidenreich et al., 2020). The proposed change in clinical practice involves standardization of follow-up care among adult cardiac patients through proactive scheduling of follow-up appointments. Studies identified demonstrate improved outcomes related to hospital readmissions, patient satisfaction, patient-rated quality of life, and mortality as a result of the implementation of standardized follow-up. Analyzing the relationships between EBP knowledge and patient outcomes is essential to the successful delivery of care. The rationale for this project is supported by a significant body of evidence. The body of evidence discovered through the systematic search and synthesis supports the recommendation for standardized follow-up care for cardiac patients. Overall, hospital readmissions threaten the health and quality of life of patients with chronic diseases (McHugh & Ma, 2013). Moreover, unnecessary hospital admissions drive costs for the organization while increasing the risk of mortality. There is an opportunity to eliminate variations in discharge practices and improve patient outcomes through standardization of follow-up care for all cardiac patients (Goyal et al., 2016). All care providers in the organization should be unified in

prescribing follow-up care based on the individual needs of the patients and the corresponding primary diagnoses.

Evidence-Based Follow-Up Care for the Cardiac Patient: A Benchmark Project

Ensuring patients have an effective, streamlined discharge process that facilitates transitional care is essential to providing comprehensive, evidence-based care. The clinical topic of interest is cardiac patients who are being discharged home following a hospital admission, and how follow-up patterns impact the rate of avoidable readmissions. The intervention PICOT question asked, “In adult cardiac patients being discharged home from the hospital (with diagnoses including heart failure, AMI/percutaneous coronary intervention, and cardiothoracic surgery) (P), how does arranging outpatient follow-up appointments (I) compared to no structured follow up(C) affect the rate of avoidable readmissions (O) within 30 days of discharge (T)?” The topic of interest comes from personal experiences involving cardiology and cardiothoracic surgery nursing backgrounds, as well as a strong desire to deliver comprehensive care for patients. The purpose of this benchmark project is to deliver an extensive report of the change project to improve the follow-up care of adult cardiac patients.

Rationale for the Project

The benchmark of the proposed change project will promote comprehensive care for cardiac patients following discharge. Providing comprehensive discharge planning with appropriate follow-up coordination can make the difference between optimal and poor patient outcomes (Goyal et al., 2016; McHugh & Ma, 2013). The lack of a streamlined follow-up process can result in unexpected and potentially avoidable hospital readmissions, leading to poor patient outcomes, increased costs, and financial burdens (Berg et al., 2013; Coppa et al., 2021; Lee et al., 2016). Consequently, the vicious cycle of readmissions negatively affects patient quality of life.

Implementation of this project will promote comprehensive care for cardiac patients following discharge. Additional rationale for change comes from consideration for the ethical principles of respect for autonomy, beneficence, and nonmaleficence. Including the patients' preferences and upholding the ethical principle of respect for autonomy is critical in ensuring the delivery of patient-centered care. A better understanding of what patients are feeling and thinking, as well as how a cardiac-related hospitalization impacts their personal lives and norms after going back home, is essential in integrating EBP (Berg et al., 2013; O'Mathuna., 2019). Ensuring proper follow-up promotes the health and well-being of all patients. Furthermore, standardized follow-up care can proactively address any issues patients might have during the recovery and transitional period. Upholding the ethical standards of beneficence and nonmaleficence is also demonstrated through a collaborative effort between all stakeholders and members of the health care team (O'Mathuna, 2019). While the original implementation was converted to a benchmark project, the aim of this initiative remains the same: to eliminate variations in follow-up appointments and promote comprehensive, quality care and increased patient satisfaction.

Literature Synthesis

The evidence related to adult cardiac patients being discharged home following an inpatient hospitalization is generated from rigorous research and contributes to the goals of decreasing the number of avoidable readmissions. Of the twelve studies identified, the research design consists of two systematic reviews, two randomized control trials, five case-control or cohort studies, two descriptive studies, and one evidence-based guideline. To assess the effectiveness of standardized follow-up care for cardiac patients, the following data were considered in each study: readmission rates, patient satisfaction, patient-rated quality of life, and

mortality. Among the selected studies, the highest frequency of measured clinical outcomes was readmission rates. Nine quantitative studies demonstrated a decrease in avoidable readmission rates (Baker et al., 2015; Borregaard et al., 2019; Cajanding, 2017; Coppa et al., 2021; Heidenreich et al., 2020; Lee et al., 2016; Lee et al., 2020; Shah et al., 2018; Zhu et al., 2015). A multidisciplinary, peer-reviewed clinical practice guideline echoes these findings by suggesting that early, structured follow-up care could reduce avoidable readmissions (Heidenreich et al., 2020).

Decreased mortality was reported in two prospective cohort studies, a randomized control trial, and two systematic reviews (Borregaard et al., 2019; Cajanding, 2017; Driscoll et al., 2020; Shah et al., 2018; Zhu et al., 2015). Patients' experiences were explored in a qualitative study completed by Berg et al. (2013), as well as a systematic review completed by Shah et al. (2018). Both studies discuss the need for a strong foundation for patient-centered care, further supporting the need for recognition of both physical and mental needs throughout the transitional care period (Berg et al., 2013; Shah et al., 2018). Additionally, increased patient satisfaction was demonstrated in two studies as a result of standardized follow-up care (Cajanding, 2017; Zhu et al., 2015). The results promote discernment of how patients are impacted in the transitional period following hospitalization.

While the body of evidence provided a variety of follow-up and transitional care interventions, a key takeaway from the studies was the importance of standardization. Implications for practice supported by the body of evidence include standardizing discharge planning and follow-up care to decrease avoidable readmissions, which will improve patient outcomes, satisfaction, and quality of life (Baker et al., 2015; Berg et al., 2013; Borregaard et al., 2019; Cajanding, 2017; Coppa et al., 2021; Driscoll et al., 2021; Goyal et al., 2016; Heidenreich

et al., 2020; Lee et al., 2016; Lee et al., 2020; Shah et al., 2018; Zhu et al., 2015). Moreover, the body of evidence suggests that follow-up care designed to proactively address any issues patients might have following discharge leads to improved outcomes. Ensuring patients have an effective, streamlined discharge process that facilitates transitional care is essential to providing comprehensive, evidence-based care (Baker et al., 2015; Berg et al., 2013; Borregaard et al., 2019; Cajanding, 2017; Coppa et al., 2021; Driscoll et al., 2021; Goyal et al., 2016; Heidenreich et al., 2020; Lee et al., 2016; Lee et al., 2020; Shah et al., 2018; Zhu et al., 2015). Limitations across the identified literature include differing quality appraisals and methodologies with a variance in sample sizes. The findings synthesized from the literature are supportive of the implementation of standardized discharge practices for adult cardiac patients. (Appendix A).

Project Stakeholders

Clinical expertise is another contributing component to evidence-based decision-making in my practice setting. Patient-centered care requires stakeholders and clinicians who are willing to constantly grow and apply their knowledge to positively impact patients (Fineout-Overholt et al., 2019). Furthermore, the thought processes of stakeholders and clinicians influence how they practice, and the roles of clinicians are critical in preventing readmissions (Berg et al., 2013; Fineout-Overholt et al., 2019). Stakeholders and inter-professional collaborators for the proposed change project include both hospital and clinic-based administrators, cardiac physicians and advanced practice clinicians, directors of cardiac inpatient units, hospital quality department, and engaged clinic and inpatient cardiac nurses. Each of these stakeholders has specific skills that are integral to the success of the proposed EBP project. Administrators will be able to support and champion the project, as well as manage any business-related components to the project. Physicians, advanced practice clinicians, and clinical directors will be the leaders of clinical

change and ensure the culture of change is positively impacted. Engaging the organization's quality department will provide the group with the current status of the clinical outcomes and serve as a direct link to incorporating the proposed change into current policies or assisting with the development of new policies and pathways. Finally, active participation of nursing staff will be able to identify and speak to variations in clinical practice and promote staff engagement. Permission and buy-in from physicians, advanced practice clinicians, and clinical directors are necessary, as this group will be the leaders of clinical change and ensure the culture of change is positively impacted.

Implementation Plan

Implementation of an EBP change project involving a standardized discharge process for cardiac patients being discharged home from the hospital is supported by patient preferences, clinical expertise, and the substantial body of evidence. This knowledge must be translated efficiently into clinical practice to improve the quality of patient care (Rodgers et al., 2019). Although this plan could not be directly implemented in the practice setting, a step-by-step plan will be outlined regarding implementation.

The first step involves a current data review on admissions and planning meetings with stakeholders (Fineout-Overholt et al., 2019). The data review and planning meeting would begin with a small group of leaders, including nursing administration and the lead physicians from cardiology and cardiothoracic surgery. The small group will review the current data related to 30-day readmission rates of adult cardiac patients being discharged home from the hospital. The goal of this review is to identify common reasons for readmission and opportunities to improve current practice, including standardization of the follow-up and transitional care. The planning and data review will prepare the group for the second step: presentation of the project and

seeking approval from stakeholders. The involvement of stakeholders in developing change is critical to the overall success of the project (Fineout-Overholt et al., 2019). Stakeholders and inter-professional collaborators for the proposed change project include both hospital and clinic-based administrators, cardiac physicians and advanced practice clinicians, directors of cardiac inpatient units, hospital quality department, and engaged clinic and inpatient cardiac nurses. Permission and buy-in from physicians, advanced practice clinicians, and clinical directors are necessary, as this group will be the leaders of clinical change and ensure the culture of change is positively impacted (Fineout-Overholt et al., 2019).

The third step involves collaborating with information technology (IT) and electronic health record (EHR) analysts to update current discharge pathways and order sets for cardiac patients. Important considerations include a seamless workflow for care providers and standardized order sets to include proactive scheduling of follow-up appointments (Lee et al., 2016). Resources needed include information technology expertise to integrate the change project into the patients' EHR. IT will create an auto-populated note, called a smart-phrase, that includes components of the discharge process, called ".DCHEART". The note will be incorporated into the discharge process and clinical pathway by typing the smart phrase and ensuring the components are completed. These components include discharge instructions, scheduled appointments, education on incentive spirometry, completed care plan, outpatient cardiac rehabilitation information, and medication education. (See Instrument).

The fourth step involves educating clinical leaders and care providers of the change in practice. Education will take place with inpatient and outpatient nurses, as well as scheduling personnel, on the new follow-up structure and use of ".DCHEART". The fifth step is a "Go Live" with the new discharge follow-up appointment in the care environment. The "Go Live" is

defined as the time the order sets, clinical pathway, and “.DCHEART” smart-phrase will be active in the live patient care environment and EHR. Continued education and support from clinical leaders will ensure the new process is supported and sustained (Fineout-Overholt et al., 2019; Lee et al., 2016). The sixth step is to gather new and current objective and subjective data on the change process. Objective data includes 30-day readmission rates and chart review to ensure “.DCHEART” is being utilized, while subjective data will be assessed through feedback from bedside team members.

The final step is to review the current readmission data and feedback on the change process and conclude the project by disseminating the results to the stakeholders. This readmission data will be continually reviewed every quarter, consistent with national metric reporting within the organization. Emphasis on continuous quality improvement and sustained practice change will be included.

Timetable/Flowchart

The project will be implemented with consideration of patient preference and clinical expertise. The ideal timeline for implementation of the project was originally scheduled to take place over twelve weeks starting August 2021 through December 2021; however, due to the overwhelming effects of COVID-19, the project was placed on hold. Major phases for project implementation with corresponding dates are included in the table below. The steps outlined in the timetable and flowchart correspond with each step in the implementation plan (Appendix B).

Heart Hospital Follow-Up Change Project Timetable

Week 1-2	Current Data Review & Planning with Administration
Week 3	Presentation and Approval from Stakeholders
Week 4-6	Integration with EHR, Education with clinical leaders and bedside RNs, creation of (.DCHEART) discharge note
Week 6	Provide education to clinical leaders and care providers
Week 7-10	Go Live with Appointment at discharge (.DCHEART)
Week 11	Gather new, current 30-day readmission data and subjective feedback from care providers
Week 12	Disseminate Results to Stakeholders and advocate for sustained change in practice

Data Collection Methods

The goal of the evaluation is to determine the effect of standardized follow-up care for adult cardiac patients being discharged from the hospital on 30-day readmission rates. An overview of steps to thoroughly evaluate the evidence-based project includes the collection of readmission data in a standardized fashion, interdisciplinary evaluation of objective data, evaluation of subjective data, and reporting outcomes to key stakeholders (Alexandrov et al., 2019). Evaluation starts with the collection of data. Specific data being collected includes 30-day readmission data for adult cardiac patients being discharged home from the hospital. Internal reports will be generated to capture data on readmissions. Feedback on the change process will be collected through an electronic survey distributed to care providers (Alexandrov et al., 2019).

Outcomes will be measured objectively through quality data reporting related to hospital readmission encounters. Specific objective information being evaluated includes 30-day readmission rates for patients being discharged home from the hospital. The diagnoses of interest

include heart failure, AMI/percutaneous coronary intervention, and cardiothoracic surgery.

Readmission data is captured in the quality department through national registry data, as well as the finance department through Center for Medicare and Medicaid Services (CMS) claims data (Alexandrov et al., 2019). Subjective data will be assessed through feedback from bedside team members in the form of an electronic survey (Appendix D). A link will be provided to clinical leaders to provide to bedside nurses and clinicians involved in the delivery of care. Active participation of nursing staff will be able to identify and speak to variations in the clinical practice change process. Furthermore, the survey will promote staff engagement to sustain the change project (Yoo et al., 2019).

Presenting the results of the evaluation will allow for stakeholders to understand the results achieved and validate the meaning for clinical practice (Alexandrov et al., 2019; Wood et al., 2019). Objective data regarding readmissions will be presented using a run chart with monthly intervals on the x-axis, and readmission rates displayed on the y-axis (Alexandrov et al., 2019). Subjective data will be presented as a bar graph with percentages of each response. Emphasis on continuous quality improvement and sustained practice change will be included. Although this project was not implemented, an indication that the implementation will be successful is through the results of a lowered avoidable readmission rate among adult cardiac patients.

Cost/Benefit Discussion

CMS (2020) incentivizes hospitals to improve communication and care coordination efforts to better engage patients and caregivers on post-discharge planning. Financial penalties are given to hospitals that have higher-than-expected rates of readmission among patients with certain diagnoses. According to Urbich et al. (2020), the median cost of a heart failure hospital

readmission is over \$13,000 per patient and slightly higher for patients with additional comorbidities. There are negative economic implications from excessive, avoidable readmissions, including financial burden and decrease of patients' quality of life. Justification of the time and resources to support this benchmark project is patient well-being and quality of life, financial benefit, and the community's opinion of the organization regarding the quality of care.

The cost of the project is an estimated \$3500 to compensate IT during the integration phase, as well as compensation for educational training time for all clinical team members participating in the discharge process. The investment of resources to improve follow-up care and train staff appropriately will eliminate any potential variation in care. The promotion of comprehensive follow-up care is cost-effective and practical. Patients will benefit greatly from standardized discharge processes, while the organization will optimize financial performance.

Discussion of Results

Due to the overwhelming changes brought about by the recent COVID-19 pandemic, there is not an official evaluation from an implementation project, hence the benchmark study. However, there was positive feedback from the Vice President of Operations, nurse leaders and educators, and bedside nurses that in the future, this project can be successful. At the beginning of this semester, the support was overwhelming, and the teamwork of all healthcare professionals was evident. In the future, when staffing and acuity are reestablished in the organization, the project can resume, and a proper evaluation can be conducted. Although this implementation project had to be converted to a benchmark study, the leaders from the multidisciplinary team in the organization were encouraged by the innovative ideas and assured that this is a project worthy of implementation once appropriate.

According to Melynk and Fineout-Overholt (2019), important elements needed for successful organizational change include a vision, belief, and a well-formulated strategic plan. Leaders must communicate this shared vision to unify the team of individuals that will lead the change (Melynk & Fineout-Overholt, 2019). Moreover, implementation of change requires belief and confidence in the vision. Melynk and Fineout-Overholt (2019) discuss the need for emotional investment to generate belief and support in a plan. This foundation of confidence in the implementation of change will encourage team members through the change process and ensure the organization stays aligned with the vision. CHRISTUS Trinity Mother Frances Hospital has a strong foundation and a centralized vision, and these tools, along with appropriate timing, will help manage the change process. Leaders and stakeholders have confidence in this vision to "be a leader, a partner, and an advocate in the creation of innovative health and wellness solutions that improve the lives of individuals and communities" (CHRISTUS Health, 2021). A successful project would include decreased avoidable readmissions among adult cardiac patients, as well as complete integration of standardized follow-up care.

Conclusions/Recommendations

Recommendations include the future implementation of a standardized follow-up process for adult cardiac patients. The recommendation for implementation of an evidence-based practice change project involving a standardized discharge process for cardiac patients being discharged home from the hospital is supported by patient preferences, clinical expertise, and a substantial body of evidence. Avoidable hospital readmissions drive costs for the organization while increasing the patient's risk of mortality. Moreover, the body of evidence discovered through the systematic search and synthesis supports the recommendation for standardized follow-up care for adult cardiac patients. Standardizing discharge planning to decrease avoidable readmissions will

improve patient outcomes, satisfaction, and quality of life. Demonstrating authentic leadership to foster collaboration in a multidisciplinary team setting during the planning, implementation, and evaluation phases of the project is essential to improving patient care delivery.

The next steps for the project include maintaining enthusiasm, as the ongoing support of EBP in an organization is key to sustainability. Fineout-Overholt and colleagues (2019) make a strong point in that if patient safety and optimal outcomes are valued in an organization, EBP will also be supported. Ongoing support of EBP in the organization is demonstrated and sustained through the continued engagement of nursing leadership, clinical educators, and most importantly, the front-line, bedside nurse.

References

- Alexandrov, A. W., Brewer, T. L., & Brewer, B. B. (2019). The role of outcomes and evidence-based quality improvement in enhancing and evaluating practice changes. In B. M. Melnyk & E. Fineout-Overholt (Eds.), *Evidence-based practice in nursing and healthcare: A guide to best practice* (4th edition). Wolters Kluwer.
- Baker, H., Oliver-McNeil, S., Deng, L., & Hummel, S. L. (2015). Regional hospital collaboration and outcomes in medicare heart failure patients: See you in 7. *JACC. Heart Failure*, 3(10), 765–773. doi:10.1016/j.jchf.2015.06.007
- Berg, S. K., Zwisler, A., Pedersen, B. D., Haase, K., & Sibilitz, K. L. (2013). Patient experiences of recovery after heart valve replacement: Suffering weakness, struggling to resume normality. *BMC Nursing*, 12, 1-8.
- Borregaard, B., Dahl, J.S., Riber, L. P. S., Ekholm, O., Sibilitz, K. L., Weiss, M., ... Moller, J. E. (2019). Effect of early, individualised and intensified follow-up after open heart valve surgery on unplanned cardiac hospital readmissions and all-cause mortality. *International Journal of Cardiology*, 289, 30-36. doi: 10.1016/j.ijcard.2019.02.056
- Cajanding, R. J. (2017). Effects of a structured discharge planning program on perceived functional status, cardiac self-efficacy, patient satisfaction, and unexpected hospital revisits among Filipino cardiac patients: A randomized controlled study. *The Journal of Cardiovascular Nursing*, 32(1), 67–77.
- Centers for Medicare and Medicaid Services. (2020). *Hospital Readmissions Reduction Program (HRRP)*. United States Government Printing Office.

CHRISTUS Health. (2021). *Our mission vision and values*. CHRISTUS Health.

<https://www.christushealth.org/about/our-mission-values-and-vision>

Coppa, K., Kim, E. J., Oppenheim, M. I., Bock, K. R., Conigliaro, J., & Hirsch, J. S. (2021).

Examination of post-discharge follow-up appointment status and 30-day readmission.

Journal of General Internal Medicine, 36(5), 1214–1221. doi:10.1007/s11606-020-

06569-5

Driscoll, A., Dinh, D., Prior, D., Kaye, D., Hare, D., Neil, C., ... Reid, C. M. (2020). The effect

of transitional care on 30-day outcomes in patients hospitalised with acute heart failure.

Heart, Lung & Circulation, 29(9), 1347–1355. doi:10.1016/j.hlc.2020.03.004

Fineout-Overholt, E., Giggleman, M. J., Choy, K., & Balakas, K. (2019). Teaching evidence-

based practice in clinical settings. In B. M. Melnyk & E. Fineout-Overholt (Eds.),

Evidence-based practice in nursing and healthcare: A guide to best practice (4th edition).

Wolters Kluwer.

Fineout-Overholt, E., Long, L. E., & Gallagher-Ford, L. (2019). Integration of patient preference

and values and clinician expertise into evidence-based decision making. In B. M. Melnyk

& E. Fineout-Overholt (Eds.), *Evidence-based practice in nursing and healthcare: A*

guide to best practice (4th edition). Wolters Kluwer.

Goyal, P., Sterling, M. R., Beecy, A. N., Ruffino, J. T., Mehta, S. S., Jones, E. C., ... Horn, E. M.

(2016). Patterns of scheduled follow-up appointments following hospitalization for heart

failure: Insights from an urban medical center in the United States. *Clinical Interventions*

in Aging, 11, 1325–1332. doi:10.2147/CIA.S113442

Heidenreich, P. A., Fonarow, G. C., Breathett, K., Jurgens, C. Y., Pisani, B. A., Pozehl, B. J., ...

- Ziaieian, B. (2020). 2020 ACC/AHA clinical performance and quality measures for adults with heart failure: A report of the American college of cardiology/American heart association task force on performance measures. *Circulation. Cardiovascular Quality and Outcomes*, 13(11), e000099. doi:10.1161/HCQ.0000000000000099
- Lee, K. K., Yang, J., Hernandez, A. F., Steimle, A. E., & Go, A. S. (2016). Post-discharge follow-up characteristics associated with 30-day readmission after heart failure hospitalization. *Medical Care*, 54(4), 365–372. doi:10.1097/MLR.0000000000000492
- Lee, K. K., Thomas, R. C., Tan, T. C., Leong, T. K., Steimle, A., & Go, A. S. (2020). The heart failure readmission intervention by variable early follow-up (THRIVE) study: A pragmatic randomized trial. *Circulation. Cardiovascular Quality and Outcomes*, 13(10), e006553. doi:10.1161/CIRCOUTCOMES.120.006553
- Melnyk, B. M. & Fineout-Overholt, E. (2019). Creating a vision and motivating a change to evidence-based practice in individuals, teams, and organizations. In B. M. Melnyk & E. Fineout-Overholt (Eds.), *Evidence-based practice in nursing and healthcare: A guide to best practice* (4th edition). Wolters Kluwer.
- O'Mathuna, D. (2019). Ethical considerations for evidence implementation and evidence generation. In B. M. Melnyk & E. Fineout-Overholt (Eds.), *Evidence-based practice in nursing and healthcare: A guide to best practice* (4th edition). Wolters Kluwer.
- Rodgers, C. C., Brown, T. L., & Hockenberry, M. J. (2019). Implementing evidence in clinical settings. In B. M. Melnyk & E. Fineout-Overholt (Eds.), *Evidence-based practice in nursing and healthcare: A guide to best practice* (4th edition). Wolters Kluwer.

Shah, B., Forsythe, L., & Murray, C. (2018). Effectiveness of interprofessional care teams on reducing hospital readmissions in patients with heart failure: A systematic review. *MedSurg Nursing, 27*(3), 177-185.

Urbich, M., Globe, G., Pantiri, K., Heisen, M., Bennison, C., Wirtz, H. S., & Di Tanna, G. L. (2020). A Systematic review of medical costs associated with heart failure in the USA (2014-2020). *Pharmacoeconomics, 38*(11), 1219–1236. <https://doi.org/10.1007/s40273-020-00952-0>

Wood, R. L., Migliore, L. A., Nasshan, S. J., Mirghani, S. R., & Contasti, A. C. (2019). Confronting challenges in reducing heart failure 30-day readmissions: Lessons learned with implications for evidence-based practice. *Worldviews on Evidence-Based Nursing, 16*(1), 43–50. doi:10.1111/wvn.12336

Yoo, J. Y., Kim, J. H., Kim, J. S., Kim, H. L., & Ki, J. S. (2019). Clinical nurses' beliefs, knowledge, organizational readiness and level of implementation of evidence-based practice: The first step to creating an evidence-based practice culture. *Plos One, 14*(12), e0226742. doi:10.1371/journal.pone.0226742

Zhu, Q.-M., Liu, J., Hu, H.-Y., & Wang, S. (2015). Effectiveness of nurse-led early discharge planning programmes for hospital inpatients with chronic disease or rehabilitation needs: A systematic review and meta-analysis. *Journal of Clinical Nursing, 24*(19–20), 2993–3005. doi:10.1111/jocn.12895

Appendix A

Synthesis Table**Evidence Synthesis Table**

Studies	Design	Sample	Intervention	Outcome
A	Systematic Review LOE I	N=10 Randomized Control Trials	Discharge planning program	(-) Readmission rates (28%) (-) All-cause mortality (30%) (+) QOL
B	Case Control LOE IV	N=11,985 patients	Timing of FU appointment	(-) Readmission rates with FU within 7 days (19%) No significant difference in readmission rates with FU on days 8-30
C	Qualitative Study LOE VI	N=10 patients	Semi-structured interview questions Ricoeur's Theory of Interpretation	Themes: Disturbed network, disturbed body, recovery, reflections Qualitative Findings related to outcomes that promote a better understanding of what postoperative cardiac patients are thinking and feeling and how surgery impacts lives and norms Relates to impact of pt satisfaction and QOL
D	Prospective Cohort Study LOE IV	N=1288 patients Control = 980 Intervention = 308	FU planned including collaboration with cardiologist and heart surgeon	(-) Readmission rates (15%) (-) All-cause mortality
E	Randomized Control Trial LOE II	N=143 patients Control=68 Intervention=75	Structured discharge planning and follow up	(-) Readmission rates (-) Mortality (+) Patient satisfaction (+) QOL

		AMI patients		
F	Systematic Review LOE I	N=10 Studies	Implementation of interprofessional care team (including structured FU) in HF patients	(-) Readmission rates (-) Mortality
G	Randomized Control Trial LOE II	N=2091 patients TFU = 1027 In-person = 1064	Comparing TFU to in-person clinic appointment	(-) Readmission rates (TFU 8.6%; In-person 10.6%) Completion Rates: TFU= 92% In-person= 72%
H	Retrospective Cohort Study LOE IV	N=50,772 patients 32,108 with FU 18,664 no FU	Appointment scheduled status vs. appointment arrival status	(-) Readmission rates with completed scheduled FU (Arrived at scheduled FU = 6.0% RR) (No FU = 8.8% RR) (Missed scheduled FU = 10.3% RR) Discusses value in scheduling FU appointments during hospital admission
I	Retrospective Cohort Study LOE IV	N=796 patients	Observation of FU pattern, stratification between follow up status (present or absent)	Only 50% patients leaving hospital discharged with scheduled FU Qualitative findings discuss importance of assessing rate of FU and need for standardization to reduce RR and Mortality
J	Descriptive/Observational LOV VI	N=20 hospitals 10 participating 10 non-participating, similar	Utilization of standardized FU initiative	(-) Readmission rates (2.6%) (+) Scheduled FU appointments

K	Clinical Practice Guideline LOE VII	All adult patients >18 years with a diagnosis of HF in the US	Performance measures collected through required participation with national registry	Early FU associated with lower 30-day RR Multidisciplinary team collaborated on guideline recommendations with supportive evidence and rationales FU listed as an ACC/AHA Class 2a Recommendation, Level B Evidence
L	Prospective Cohort Study LOE IV	N=1997 patients	Annual snapshot of HF patients, LOS, mortality and RR rates	No change in Readmission rates (-) Mortality The influence of readmissions and outpatient review on 30- day mortality highlights the need for increased surveillance and transitional services to support patients during the vulnerable period post-discharge to prevent readmissions

Legend: A = Zhu et al., 2015, B = Lee et al., 2016, C = Berg et al., 2013, D = Borregard et al., 2019, E = Cajanding, 2017, F = Shah et al., 2018, G = Lee et al., 2020, H = Coppa et al., 2021, I = Goyal et al., 2016, J = Baker et al., 2015, K = Heidenreich et al., 2020, L = Driscoll et al., 2020;
Legend: ACC/AHA=American College of Cardiology/American Heart Association, AMI= acute myocardial infarction, CABG=coronary artery bypass grafting, CI=confidence interval, CTS=cardiothoracic surgery, DC=discharge(d), DPP= discharge planning program, DV=dependent variable, FU=follow up, HF=heart failure IV=Independent Variable, LOE=level of evidence, LOS= length of stay, Pt=patient, QOL=quality of life, RCT=randomized control trial, RR=readmission rate(s), SR=systematic review, TFU=Telephone follow-up

Outcomes Table: Impact on Outcomes for Cardiac Patients

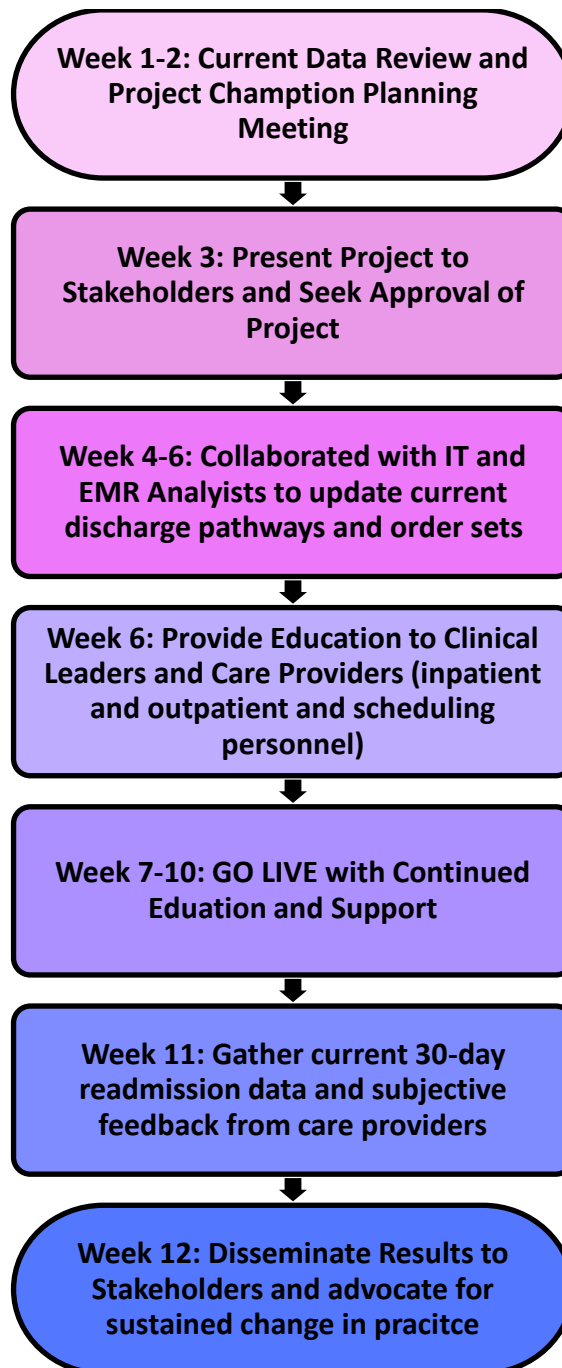
	A♦	B	C	D	E♦	F♦	G♦	H	I	J	K	L
RR	(-)*	(-)	NE	(-)*	(-)*	(-)*	(-)	(-)	QF	(-)*	(-)	NC
Pt Satisfaction	(+)	NE	QF	NE	(+)*		NE	NE	NE	NE	NE	NE
QOL	(+)	NE	QF	NE	(+)*	NE	NE	NE	NE	NE	NE	NE
Mortality	(-)*	NE	NE	(-)	(-)*	(-)*	NE	NE	QF	NE	NE	(-)*

Legend: A= Zhu et al., 2015, B= Lee et al., 2016, C= Berg et al., 2013, D= Borregard et al., 2019, E= Cajanding, 2017, F= Shah et al., 2018, G=Lee et al., 2020, H= Coppa et al., 2021, I= Goyal et al., 2016, J= Baker et al., 2015, K= Heidenreich et al., 2020, L= Driscoll et al., 2020;

*= statistically significant findings; ♦= higher level evidence; NC= No change; NE=Not evaluated; Pt=Patient; QF=Qualitative Finding(addressed in synthesis table); QOL=Quality of Life

Appendix B

Flowchart



Appendix C

Instrument

“DCHEART” Discharge Pathway Documentation

Kelley, Natalie E, RN
Nurse Navigator
Specialty: Valve Clinic Nurse Navigator

Progress Notes

Signed

Encounter Date: 11/15/2021

Signed

Discharge process completed as follows

- Discharge Instructions provided
- Discussed scheduled appointments and follow ups
- Incentive Spirometry with patient's belongings
- Discontinued all lines, monitors and unnecessary tape, ECG leads, etc. *if applicable*
- Care Plan completed
- Education completed
- Outpatient Cardiac Rehab Referral and Education completed
- CHF book provided, if applicable
- Added Signs and Symptoms of Heart Attack Information to AVS.
- Surgical incision cleansed and new Silverlon dressing applied *if applicable*
- Discharge medication Education and Information provided:
 - **Beta Blocker : YES**
 - **Aspirin and/or Plavix or other Antiplatelets: YES**
 - **ACE/ARB: YES**
 - **Statin(AMI requires high statin): YES**
 - **Aldosterone Antagonist (if EF<or=35%): YES**

For AMI and HF patients only: Appointment made with date and time for follow up within 7 days or per provider's order

For TAVR patients only: Postop Complete ECHO obtained before discharge.

Dec 09, 2021 11:00 AM	703 S. Fleishel
Echo Complete (Adult) with LPOHH	Tyler TX 75701
ECHO 4 OUT	903-606-3903
LPOHH Noninvasive (Louis and Peaches Owen Heart Hospital)	
Dec 09, 2021 1:00 PM	619 S Fleishel Ste 100
Follow Up Appointment with Sheldon Freeberg, MD	TYLER TX 75701
	903-606-7000
CHRISTUS Trinity Mother Frances Cardiology Clinic (Medical Arts Plaza)	

Natalie E Kelley, RN
Discharge Nurse

Electronically signed by Kelley, Natalie E, RN at 11/15/2021 10:10 AM

Hide copied text

Hover for details

Appendix D

Survey

Standardized Discharge and Follow-Up – Post Intervention Survey

Please indicate the unit in which you primarily work:

- LPOHH 3
- LPOHH 4
- LPOHH 5
- LPOHH 6
- OPCU
- Nursing Resource Center/Float Pool (NRC)

Do you feel patient the discharge process has improved?

- Yes
- No

Do you feel overall patient care has improved?

- Yes
- No

How would you rate the “.DCHEART” Smart phrase?

- Excellent
- Good
- Fair
- Poor

Recommendations/Suggestions: