

Educating Caregivers Reduces Hospital Readmissions

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Abstract

The Affordable Care Act, introduced in 2012, created the Hospital Readmissions Reduction Program which imposed monetary sanctions on hospitals that exceeded the benchmark for readmissions for six pre-established diagnoses. Heart Failure was and remains the number one diagnosis for 30-day readmissions. The focus of this project was to educate caregivers of patients having heart failure with the goal of reducing 30-day readmissions to the hospital. The desired outcome was a reduction in the penalties levied by the Centers for Medicare and Medicaid Services. Education is and remains the key to positive outcomes in healthcare. Whether it is the patient or their caregiver, increasing their knowledge base and providing the tools necessary to enhance the delivery of care the results are the same, e.g., improved quality of life. The project demonstrated that education, which was provided in many forms and through various venues, resulted in a reduction of 30-day readmissions for heart failure patients at the project site. The project also demonstrated that, regardless of monetary sanctions, education results in positive outcomes and improved quality of life and that the project can be replicated to include other diagnoses that have heretofore demonstrated negative health outcomes.

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Section I. Introduction

Background

During a 5-year window, informal caregivers in the United States totaled 40 million and delivered 37 billion hours of care equating to an estimated \$470 billion (Aging in Place, 2020). Family caregivers, often referred to as informal caregivers, are defined as “unpaid people who provide support” for loved ones in place of long-term placement (Lagasse, 2017, p. 2). A decline in the patient’s ability to care for themselves and live independently creates a self-care deficit (Rodakowski et al., 2017). Family caregivers helped hospitals lower readmissions during the first 90 days by as much as 25% by becoming an integral part of the discharge process (Nauert, 2018). Inclusion of family caregivers into the discharge equation resulted in improved health status and patient outcomes for the patient, stability for the caregiver, and helped the provider avoid economic sanctions for patient readmissions (Rodakowski et al., 2017).

Organizational Needs Statement

The Institute of Healthcare Improvement developed The IHI Triple Aim Initiative which outlined a framework for improving performance of health systems. The framework was three dimensional: “improving the patient experience, improving the health of populations, and reducing the per capita cost of health care” (Institute of Healthcare Improvement, 2020, para 1). The Department of Health and Human Services launched Healthy People 2020 [HP 2020] in late 2010 (Centers for Disease Control and Prevention [CDC], 2020). HP2020’s four overarching goals for monitoring improvement in population health included “promoting quality of life and healthy behaviors to reach across all life stages” (CDC, 2020, para 1). HP2020 further identified forty-two topic areas and 1,300 group objectives to monitor health outcomes in the United States (CDC, 2020). Health-related quality of life and well-being, heart disease, nutrition and weight

status, and physical activity were among the forty-two topic areas (CDC, 2020). Healthy North Carolina (HNC) 2030 established 21 health indicators that target individuals who lived below the poverty level, had limited access to food, and had severe housing issues (North Carolina Institute of Medicine [NCIOM], 2020). HNC 2030 revealed that health has traditionally been a reflection of clinical health care, i.e., medical treatment; this represented approximately 20% of health outcomes (NCIOM, 2020). Social and economic factors affecting health outcomes included quality of housing, access to transportation, healthy food, and opportunities for physical activity (NCIOM, 2020).

The proposed project site was a non-profit community-based hospital, providing care to residents of the county of residence and surrounding counties (UNC Lenoir Health Care, 2020). Mission-driven, the facility “endorses service, quality, integrity, teamwork, leadership, innovation and stewardship” (UNC Lenoir, 2020, p. 1). The facility works in unison with the local health department, the Kinston Community Health Center, and the Lenoir County Alliance for a Healthy Community to assess and monitor the health status of the community (UNC Lenoir, 2020).

The facility’s reimbursement was driven by performance for the services they render with funds coming from Medicare, Medicaid and private insurance carriers (Centers for Medicare and Medicaid Services, 2020). As a not-for-profit organization, the facility was exempt from paying property, state, and federal income, and sales taxes (Krehbiel, 2017). To maintain this tax-free status the facility must provide a certain amount of charitable care for those who access their services (Krehbiel, 2017). In addition, the facility was required to participate in government programs, participate in health services research, community health improvement

activities, medical education, and provide case or in-kind contributions, as well as subsidize health services (Krehbiel, 2017).

The facility, in partnership with the local health department, conducts a community health needs assessment every 3 years [an IRS requirement for non-profit organizations] (Lenoir County Health Department, et al., 2018). The Lenoir County Community Health Needs Assessment (CHNA) 2018 concluded that approximately 19.1% of the population does not have safe and affordable housing (Lenoir County Health Department et al., 2018). Jindal et al. (2018) noted that there was an association between social environmental factors, which influenced a patient's living accommodations, and the frequency and level of care they receive from informal caregivers. Due to these social/environmental factors, the care provided by caregivers may be more infrequent which ultimately affects the quality of care received.

The Center for Medicare and Medicaid Services' Readmission Reduction Program penalizes hospitals with preventable readmissions (Definitive Healthcare, 2020). The United States' benchmark for all hospital readmissions is 14.9% (United Health Foundation 2019). According to America's Health Rankings 2019 report, North Carolina ranks 24th in the nation for hospital readmissions at 14.5% (United Health Foundation, 2019). The facility is dedicated to reducing unplanned readmissions, encouraging their care teams to collaborate, ensuring the provision of appropriate discharge planning, instructions, and follow-up care to patients to help reduce the risk of readmission (UNC Lenoir, 2020). While North Carolina ranks below the benchmark established by the Center for Medicare and Medicaid Services (CMS), the project site's readmission rate far exceeds the benchmark, resulting in monetary penalties imposed by CMS.

Problem Statement

Thirty-day hospital readmission rates for heart failure patients discharged from the project site is 17.8 %, resulting in monetary penalties imposed by the Centers for Medicare and Medicaid Services.

Purpose Statement

The project aimed to formalize the education of caregivers of patients with heart failure after discharge to reduce 30-day readmission rates for this demographic of patients. Arming the caregivers of patients with heart failure with needed resources and knowledge necessary to meet the medical needs of their family members, will improve patient outcomes, reduce hospital readmissions, and reduce penalties imposed on the facility (Rodakowski et al., 2017).

Section II. Evidence

Literature Review

The search strategy related to the proposed plan of educating caregivers to reduce hospital readmissions included utilization of the following databases: PubMed, Scholar, and CINAHL. Searches were conducted utilizing MESH terminology to include “30-day readmissions with heart failure”, “training informal caregivers of heart failure patients”, “toolkits available for caregivers”, “caregiver factors that influence hospital readmission”, and “statistical data related to heart failure hospital readmissions”. In total, the search identified 6,263 related articles. Inclusion criteria to narrow the search to more meaningful data included publications within the last 5 years, meta-analysis, systematic reviews, peer-reviewed, evidence-based, and randomized control trials. After applying the inclusion criteria, the search was narrowed to 37 articles of interest. Exclusion criteria included studies conducted in nursing homes, studies that included multiple comorbidities to include COPD and pneumonia concomitantly with heart failure, and caregiver abuse. After exclusion as noted, 18 articles were kept for review. All remaining articles were read in entirety. Of the 18 articles kept for review, 16 included levels of evidence as reflected in Melnyk & Fineout-Overholt’s (2011) model to include Levels I-IV, i.e., systematic review, randomized control trials, trials without randomization/quasi-experimental, case-control and cohort studies. The remaining two articles did not meet the criteria established by Melnyk & Fineout-Overholt’s model levels of evidence.

Current State of Knowledge

The studies had various approaches and desired outcomes. Approaches utilized included telephone calls, face-to-face interviews, classroom instruction, home health visits, and heart

failure clinics. Interdisciplinary collaboration was evident in most; however, lack of support from upper management was lacking and reflected in the meager outcome projections of a few of the studies. There was evidence of a clear understanding of the dilemma hospitals face related to hospital readmissions, especially for heart failure patients, and the penalties imposed for failure to meet federal guidelines for readmissions. The most pressing issues hospitals are faced with included the ever-changing Hospital Readmissions Reduction Program (HRRP) patient risk scores and diagnosis coding (Center for Medicare and Medicaid Services, 2020). This resulted in reduced reimbursement, forcing staff reductions, which ultimately affected the quality-of-care outcomes (Ody et al., 2019). This is then reflected in poor satisfaction surveys, tools utilized by the Center for Medicare and Medicaid Services (CMS) for reimbursement. The literature validated the importance of incorporating the caregiver into the discharge equation to reduce readmissions, thus reducing potential penalties imposed by CMS (Nauert, 2018).

Multiple studies were conducted providing evidence that interaction with the caregivers was an important component of discharge planning (Lagasse, 2017). Staff-targeted programs aimed at improving discharge education demonstrated a reduction in 30-day readmission rates (Distelhorst, 2020, Leavitt et al., 2020, & Wyer et al., 2015). Distelhorst (2020) acknowledged that early follow-up post-discharge was significant in reducing readmissions.

Current Approaches to Solving Population Problem(s)

Internal approaches identified in the literature to address the facility's desire to reduce hospital readmissions for heart failure patients that had merit included interdisciplinary team collaboration during hospitalization and early inclusion of the caregiver in the discharge planning process (Shah et al., 2018). External approaches identified to address the facility's desire to

reduce hospital readmissions included educating and providing support for the caregiver after discharge of the patient, consideration of the socioeconomic status of the patient/caregiver and utilization of available external resources (Distelhorst, 2020, Leavitt et al., 2020).

Evidence to Support the Intervention

After collaboration with the facility for the proposed project, it was decided that a multidimensional approach was most appropriate to address readmissions for heart failure patients. An interdisciplinary approach was needed to include internal and external resources. Distelhorst (2020) acknowledged the importance of utilization of internal resources to include physician collaboration, discharge planning upon admission, education clinics for caregivers, and education of nursing/direct care staff. Piette et al. (2015) “conducted a randomized comparative effectiveness trial” (p.1), validating the importance of communication with the caregiver(s) post-discharge to reduce the strain and depression that, oftentimes, comes with this responsibility. The facility for the proposed project recognized the importance of educating family members early on in the treatment phase to prepare the family/caregivers of long-term needs, allowing time to put measures in place to maintain quality of life for the caregiver and the patient over time.

Evidence-Based Practice Framework

Identification of the Framework

The conceptual framework chosen that works within the given parameters of the outcomes desired by the facility for the proposed project was Six Sigma (Arthur, 2016). Six Sigma is based upon the intervention principles to include defining stakeholders as well as defining the problem, measuring current processes, analyzing possible process failures, improving failure causes, and controlling the processes implemented (DMAIC) (Godley &

Jenkins, 2019). Godley and Jenkins (2019) further defined stakeholders as all members of the interprofessional healthcare team responsible for patient outcomes. A key element of Six Sigma, and an important tool for the proposed project facility, included defining what is not working, e.g., “conducting a failure mode and effects analysis (FMEA) to identify probable process failures” (Arthur, 2016, p. 63). The next step was to acknowledge what the negative ramifications of their current practices are and what measures have been identified as possible solutions that have resulted in positive outcomes (Arthur, 2016).

The Community Readiness Model was also of benefit secondary to the proposed interventions of inclusion of external resources for addressing the problem (Plested et al., 2006). The Community Readiness Model is multidimensional, to include nine stages of readiness (Plested et al., 2006). The nine stages include no awareness, denial, vague awareness, preplanning, preparation, initiation, stabilization, confirmation/expansion, and professionalism (Plested et al., 2006). The community health needs assessment conducted by the proposed project facility in collaboration with other key community players was a key component of the stages of readiness, e.g., awareness and preplanning ((Plested et al., 2006).

Ethical Consideration & Protection of Human Subjects

All patients with an admitting diagnosis of heart failure admitted to the facility the last twelve months were identified prior to the onset of the project. It was determined, at that time, if an informal caregiver was involved in their care. These caregivers were then be asked to participate in an education program/workshop for caregivers of heart failure patients to better prepare them for their role as caregiver. All admission and discharges of patients with heart failure with informal caregivers who attended the educational session, were tracked for the

duration of the study. Participation in the study was equal and equitable to all caregivers of heart failure patients admitted to the facility. There was no potential for harm for any participant in the study nor a conflict of interest.

Preparation for the formal approval process, e.g., the IRB, included completion of modules included in the Collaborative Institutional Training Initiative (CITI) that included the social, behavioral and education sciences. In preparation for the IRB with the project facility a project assessment tool was developed, outlining the development, implementation and evaluation of the project. The project site did not have a formal IRB and relied on the approval obtained from the university for Quality Improvement. (See Appendix C)

Section III. Project Design

Project Site and Population

The project was completed at the community-based healthcare facility. The population being evaluated included all patients admitted to the facility with an admission/primary diagnosis of heart failure who had caregivers in the home. Barriers to implementation of the QI study included technology, i.e., virtual education, the IRB process, flexibility of the caregiver(s), limitations imposed by the Covid-19 pandemic, educational level of the caregivers, HIPAA and confidentiality constraints, and time constraints, i.e., 3-month window to conduct the study. The Covid-19 pandemic also functioned as a facilitator of the QI study, i.e., forcing evaluation of other methods of reaching the caregivers, streamlining the process.

Description of the setting

The setting for implementation of the project was a community-based acute care facility with a mission to provide care for residents of the county of residence and surrounding counties. Data collection was conducted at the facility. In lieu of the coronavirus and restrictions mandated by the facility to prevent the spread of the virus, modifications were necessary with the original project as it related to the educational component of the project.

Description of the population

The number one reason for hospital readmissions in 30-days or less at the facility was heart failure. The population audited included all patients, regardless of age or race, who had an admission diagnosis of heart failure and had a caregiver who assisted in their care. The QI project purported to evaluate patients with heart failure who had caregivers that could be educated in the care and treatment of heart failure. Caregivers could be male or female, English and/or Hispanic speaking and greater than 18 years of age. Consideration was made for

participants who spoke a language other than English or Spanish; however, the need to utilize an interpreter never presented itself.

Project Team

The project team included the faculty member, project leader (DNP student), Site Champion and the heart failure coordinator. The Site Champion provided oversight of the total implementation of the project, delegating oversight to the Heart Failure Coordinator at the site. The DNP student was focused on development and implementation of the QI project based on current evidence presented. The faculty member was instrumental in providing guidance and direction for remaining cognizant of the goals and desired outcomes of the project and interjecting thoughts for improvement without sacrificing the integrity of the project.

Project Goals and Outcome Measures

Description of the methods and measurement.

An Internal Review Board (IRB) review was completed prior to project implementation. The site did not have a formal IRB process, but rather relied on the University process and provided written confirmation. After IRB approval, project implementation was initiated. A run chart, a run-sequence plot, was utilized to display data collected in a time sequence format. The data collected included the total number of patients admitted with a diagnosis of heart failure, the total number of patients with caregivers in the home setting, the total number of caregivers who attended the educational classes developed to educate the caregivers about heart failure and the total number of patients who were readmitted within 30 days of the date of discharge during the designed time frame.

Discussion of the data collection process.

Data was collected initially, i.e., a baseline, to determine the number of patients who had been admitted to the facility with a diagnosis of heart failure and a caregiver in the home in the same 3 months of the previous year as the projected time frame of project implementation. Once this group of patients was identified, patients with caregivers in the home were identified; their caregivers were offered an opportunity to attend the caregiver education classes to be held one month after implementation. Follow-up phone calls with caregivers then occurred weekly for class participants and for caregivers unable to attend the classes to identify concerns and continuation of the teaching process, etc. All admissions during the 3-month window who had a diagnosis of heart failure and who had caregivers in the home were tagged and tracked for 30-day readmissions to the facility (See Appendix D, Data Collection Tool for HF Patients).

Implementation Plan**Timeline**

The implementation phase occurred over 13 weeks with site (facility) visits weekly to include data collection, conduct classes and follow-up phone calls with caregivers. Week 11 concluded with finalization of the data and submission for review. Bi-weekly reassessments were conducted for project modification as necessary to maintain the integrity of the project (See Appendix E. Project Timeline).

Section IV. Results and Findings

Results

The project measured the number of admissions and discharges from the project site for an eleven-week period of patients who had a new onset or history of heart failure (HF) at the time of admission. Inclusion criteria included patients who were 65 years of age or older and had Medicare as their primary payor (HRRP program age requirement). Exclusion criteria included admissions from a long-term care facility, less than 65 years of age whose payor was Medicare, less than 65 years of age with HF, and the patients who were followed by the Heart Failure Program (Paramedic Program) at the project site. All forty-eight (48) patients who met the criteria had an available caregiver. Of the 48 patients identified who had a caregiver, 36 attended the HF classes and/or were communicated with via telephone and/or mailings to educate about HF. Of the 36 patients/caregivers who were educated/communicated with, two (2) had a readmission in less than 30 days of their discharge date.

Table C1

Patient/Caregiver Participation/Communication

Class participants	Telephone calls/texts	Mass mailings (fliers)	Equipment mailed
23 (of 42 invitees)	95	63	4 (pulse oximeters and blood pressure machine)

Table C2

Inclusion/Exclusion Criteria for Heart Failure Admissions

Total # of admissions	Met criteria	Excluded: paramedic program	Excluded: < 65 years of age	Excluded: long term care	Excluded: ED/Observation
130	48	41	26	7	8

Expectations

The study anticipated that patients whose caregivers were educated about HF would have less hospital readmissions in the first 30 days after discharge than patients who had caregivers who did not attend the HF classes. Readmission rates for HF patients for fiscal year 2018-2019 was 17.1%, for fiscal year 2019-2020 17.8 %, and for fiscal year 2020-2021 (7/1/2020-10/31/2020) 22.8%. The less than 30-day readmission rate for HF patients who they or their caregiver were educated during the eleven-week period in which the study was conducted was 5.5%. Medicare's benchmark for 30-day readmissions for HF patients is 14.9%.

It is important to note that one cannot look at the original admission diagnoses to determine if the patient falls within the Medicare Hospital Readmission Reduction Program (HRRP) guidelines. Every effort is made on the front in to adequately code the admission, i.e., screening in the Emergency Room and/or admission as Observation patient before actually admitting the patient to the facility with an admission diagnosis of HF. It oftentimes takes 1-2 months post-discharge for the admission's final coding. As this study was a concurrent project, it did not take into account the patients who met the HRRP guidelines in the truest sense of the word. This may have had an impact on the readmission rate percentage (sample size may have not been statistically large enough to reflect true HF population outcomes). It is also noteworthy that this study measured only the Medicare patients 65 years of age and older with an admission diagnosis or history of HF who were not in the project site's HF program, i.e., Paramedic Program.

Outcomes Data

Data Collected

Data collected included the number of patient admissions and discharges with a new onset or history of HF admitted during the eleven-week period. These patients were tracked to ascertain the number of patients who were readmitted within 30 days of the day of discharge.

Additionally, the number of HF classes offered at the project site and the number of attendees per class were tracked. The attendance rate percentage for those registered for the classes (who met the original inclusion criteria) were also monitored as well as the number of telephone calls, texts, or mailings made to the original group of patients admitted with a new onset or history of HF.

Prior to the implementation of the project, HF classes were being taught by the Heart Failure Coordinator monthly. This was accelerated to three classes a month for the duration of the project. The purpose of the project, i.e., decrease hospital readmissions in 30 days or less thus reducing HRRP penalties, would be accomplished by educating the caregivers of the patients. Outcome measures included identification of a decrease in the 30-day readmission rate for individuals admitted with HF who attended the HF classes.

Discussion of Major Findings

Gaps were identified between the results expected and the results identified at the completion of the project. The number of patients with an admitting diagnosis or a history of HF who were admitted/readmitted in less than 30 days of discharge for the eleven-week period in which the project was conducted was small in comparison to the number of patients with an admitting diagnosis or a history of HF for the entire Medicare year (July-June). This can skew the percentages as a small sample size may not accurately portray the population of patients with an admitting diagnosis or a history of HF who were admitted/readmitted in less than 30 days of discharge for an entire year. It is also noteworthy to acknowledge that not all patients with an

admitting diagnosis or a history of HF chose to be in the Paramedic Program or the current project.

Section V. Interpretation and Implications

Cost Benefit Analysis

The project site was working with grant funding for reduction of readmissions for HF patients. The grant was in the second year of a three-year grant at the time of the project. The grant provided resources to utilize paramedics to visit/communicate with HF patients admitted to the Paramedic Program. This project targeted HF patients who were not in the Paramedic Program. Grant monies paid the salary of the Heart Failure Coordinator, which was a full-time position. A total of 70 hours was spent on-site to collect data, collaborate, etc. Expenditures totaled \$500 for blood pressure cuffs, pulse oximeters, and teaching tools for caregiver training. The estimated cost of the project was \$3000 (see Appendix A, Project Budget). Annualizing this out the total costs for one year would be \$100,000 in salary, benefits, equipment for distribution and training tools. The project site had been penalized as much as \$166,863 in one year as a result of 30-day readmissions for HF. Utilizing a full-time employee to monitor the admissions and discharges for HF alone could save the facility significant monetary penalties. Considering that there is a total of six (6) diagnoses that Medicare tracks for 30-day readmissions, with HF being one of the six, the savings could be quite significant.

Benefits

Benefits of the project for the organization included an increase in the quality of care for HF patients, monetary savings by not having penalties levied for readmissions that resulted in payback to Medicare, and identification of a pilot project that could be duplicated for the other five (5) diagnoses that fell under the Medicare Hospital Readmission Reduction Program.

Negatives

Unexpected/non-anticipated negatives for completion of the project included a delay in

access to the electronic health record early in the data collection process thus increasing the number of hours spent on data collection. This reduced the amount of time for patient/caregiver education. Covid-19 modified every aspect of the project, creating smaller and more frequent classes. This resulted in an increased utilization of the Heart Failure Coordinator to include staffing on the Heart Failure floor, which limited the availability of the Heart Failure Coordinator in training staff and educating patients/caregivers.

Return on Investment

Increasing patient/caregiver education and thereby reducing 30-day hospital readmissions demonstrated a (pending) reduction in penalties levied by Medicare, thereby saving the organization money. The project resulted in a reduction of 30-day readmissions, which reduced pending penalties that would have been imposed.

Resource Management

The Heart Failure Coordinator was instrumental in offering insight, computer application, reports, and training tools that could be utilized in teaching patients/caregivers. Based on the volume of HF patients, another full-time employee working directly with the Heart Failure Coordinator would be extremely helpful in reaching more patients/caregivers. Educating the bedside nurses as well as the discharge planners who would then educate the patient/caregiver would augment the efforts of the Heart Failure Coordinator and the paramedics. Secondary to Covid restrictions, limitations were imposed whereby visiting with the patients in their hospital rooms, meeting with the bedside nurses, etc. was not permitted. The social workers and discharge planners were instrumental in providing oversight of the discharge planning process and efforts made during hospitalization to identify key players in meeting the needs of the patient(s) upon discharge.

Implications of the Findings

Implications for Patients

Improving the quality of life of the HF patient and thereby reducing the number of hospital readmissions was the ultimate outcome anticipated by the project. This was demonstrated by a reduction in the number of 30-day readmissions.

Implications for Nursing Practice

Inclusion of patient education in the patient's plan of care and overall treatment before, during and after hospitalization is key in the reduction of hospitalizations but it also key in the overall health and well-being of the patient. Oftentimes, education prevents extension of the disease process, improving patient outcomes.

Impact for Healthcare Systems

The project validated that education is a key factor to primary, secondary, and tertiary prevention of disease thus reducing healthcare costs. A reduction of costs with a decrease in readmission rates would also decrease monetary penalties imposed by the Medicare HRRP program. Collaboration with healthcare providers to include primary care providers, hospitals, outpatient services, and long-term care facilities can strategically, working in unison, improve the healthcare of the community, specifically, as well as the population in general.

Sustainability

The project site continues to offer access to the HF program. Not all patients admitted desired to be in the HF program. Based on the penalties imposed and thus saved as a result of the project study, it would behoove the organization to continue the program. For example, the organization had to pay \$166, 683 for one year for 30-day readmissions for HF. Continuing the educational process can reduce readmissions long-term, reducing penalties resulting in positive outcomes.

Sustainability will be based upon demonstrating a reduction in readmissions. This will encourage the decision makers to expand the HF program and hopefully add additional staff as well as expand to other diagnoses in which Medicare penalizes for readmissions.

Dissemination Plan

First, a meeting with the Project Site Champion to discuss the manner in which she would like for the findings of the project to be presented. Second, sharing this project and its outcome potential with primary care providers to demonstrate the importance and efficacy of education early in the disease process is grassroots. Sharing this project with hospital administrators, i.e., the decision makers is necessary for financial support and leverage. The project demonstrated how vital it can be in preventing the extension of the disease process as well as reducing healthcare costs by reducing hospital readmissions. Sites and/or publications that would benefit from dissemination of the project include: Tar Heel Nurse, ECU Scholarship: ECU's Institutional Repository, and Sigma Theta Tau's annual convention. The project will be addressed with church groups of the importance of prevention and maintenance activities. Utilizing the poster as an educational session for the county extension office(s) in Lenoir and surrounding counties as well as churches is a start in educating the community as a whole.

Section VI. Conclusion

Limitations

The biggest limitation in the implementation process was IT knowledge/know-how. This was a barrier, as limited access was provided to the computer programs needed to collect the necessary data to progress with the project. Another barrier for the project was Covid-19, which prevented admission to the project site early on, as well as limited patient/caregiver access to the facility for training/classes. A delay in coding the final discharge diagnosis (1-2 months) ultimately skewed the data as the data utilized for the project analysis was preliminary.

Recommendations for Others

Outline, in writing, the expectations/needs with your project champion. This would save valuable time and reduce miscommunication long-term. The expectations of the project site for the proposed project should be outlined for each facet of the project to include planning, implementation, and dissemination. A written plan or a course of action in the event changes need to be made during any phase of the project. All parties must be in agreement.

Recommendations Further Study

The project concept can be utilized for high-volume readmissions that do not fall under the HRRP program but would provide an opportunity to provide quality of care outcomes. Diabetes is a great example of the need for on-going education via the primary care provider and the admitting acute care facility. Utilization of home health agencies and Emergency Management Services, i.e., paramedics, to extend the communication/training process is a key component of community collaboration.

The project demonstrated the importance of educating the patient and the caregiver to improve patient outcomes and quality of life. This, from an administrative perspective, reduces

hospital readmissions that consequently result in monetary penalties being levied by the Medicare HRRP program. Collaboration with community resources also helps solidify the care and services received while working together to reduce healthcare costs.

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Appendix A

Table 1

Project Budget

Line item	Number of Units	Cost per Unit	Total Cost per Line Item
Equipment	Blood pressure cuffs -10	\$25/each	\$250
	Pulse oximeters - 10	\$15/each	\$150
	Heart Model - 1	\$100/each	\$100
	Educational poster – 1	\$25/each	\$25
Telephone	3 months	\$113/month	\$339
Mileage	300	\$.575/mile	\$172.50
Office supplies	Composition books – 20	\$1.00	\$20
Salary	125 hours	\$30/hour	\$3750
Total:			\$4806.50

Appendix B

Table B1

Doctor of Nursing Practice Essentials

	Description		Description
Essential I <i>Scientific Underpinning for Practice</i>	<p>Competency – Analyzes and uses information to develop practice</p> <p>Competency - Integrates knowledge from humanities and science into context of nursing</p> <p>Competency - Translates research to improve practice</p> <p>Competency - Integrates research, theory, and practice to develop new approaches toward improved practice and outcomes</p>	Essential II <i>Organizational & Systems Leadership for Quality Improvement & Systems Thinking</i>	<p>Competency – Develops and evaluates practice based on science and integrates policy and humanities</p> <p>Competency – Assumes and ensures accountability for quality care and patient safety</p> <p>Competency - Demonstrates critical and reflective thinking</p> <p>Competency - Advocates for improved quality, access, and cost of health care; monitors costs and budgets</p> <p>Competency - Develops and implements innovations incorporating principles of change</p> <p>Competency - Effectively communicates practice knowledge in writing and orally to improve quality</p> <p>Competency - Develops and evaluates strategies to manage ethical dilemmas in patient care and within health care delivery systems</p>
	Description		Description
Essential III <i>Clinical Scholarship & Analytical Methods for Evidence-Based Practice</i>	<p>Competency - Critically analyzes literature to determine best practices</p> <p>Competency - Implements evaluation processes to measure process and patient outcomes</p> <p>Competency - Designs and implements quality improvement strategies</p>	Essential IV <i>Information Systems – Technology & Patient Care Technology for the Improvement & Transformation of Health Care</i>	<p>Competency - Design/select and utilize software to analyze practice and consumer information systems that can improve the delivery & quality of care</p> <p>Competency - Analyze and operationalize patient care technologies</p> <p>Competency - Evaluate technology regarding ethics, efficiency and accuracy</p>

	<p>to promote safety, efficiency, and equitable quality care for patients</p> <p>Competency - Applies knowledge to develop practice guidelines</p> <p>Competency - Uses informatics to identify, analyze, and predict best practice and patient outcomes</p> <p>Competency - Collaborate in research and disseminate findings</p>		<p>Competency - Evaluates systems of care using health information technologies</p>
	Description		Description
<p>Essential V <i>Health Care Policy of Advocacy in Health Care</i></p>	<p>Competency- Analyzes health policy from the perspective of patients, nursing and other stakeholders</p> <p>Competency – Provides leadership in developing and implementing health policy</p> <p>Competency – Influences policymakers, formally and informally, in local and global settings</p> <p>Competency – Educates stakeholders regarding policy</p> <p>Competency – Advocates for nursing within the policy arena</p> <p>Competency- Participates in policy agendas that assist with finance, regulation and health care delivery</p>	<p>Essential VI <i>Interprofessional Collaboration for Improving Patient & Population Health Outcomes</i></p>	<p>Competency- Uses effective collaboration and communication to develop and implement practice, policy, standards of care, and scholarship</p> <p>Competency – Provide leadership to interprofessional care teams</p> <p>Competency – Consult intraprofessionally and interprofessionally to develop systems of care in complex settings</p>

	Competency – Advocates for equitable and ethical health care		
			Description
Essential VII <i>Clinical Prevention & Population Health for Improving the Nation’s Health</i>	<p>Competency- Integrates epidemiology, biostatistics, and data to facilitate individual and population health care delivery</p> <p>Competency – Synthesizes information & cultural competency to develop & use health promotion/disease prevention strategies to address gaps in care</p> <p>Competency – Evaluates and implements change strategies of models of health care delivery to improve quality and address diversity</p>	Essential VIII <i>Advanced Nursing Practice</i>	<p>Competency- Melds diversity & cultural sensitivity to conduct systematic assessment of health parameters in varied settings</p> <p>Competency – Design, implement & evaluate nursing interventions to promote quality</p> <p>Competency – Develop & maintain patient relationships</p> <p>Competency –Demonstrate advanced clinical judgment and systematic thoughts to improve patient outcomes</p> <p>Competency – Mentor and support fellow nurses</p> <p>Competency- Provide support for individuals and systems experiencing change and transitions</p> <p>Competency –Use systems analysis to evaluate practice efficiency, care delivery, fiscal responsibility, ethical responsibility, and quality outcomes measures</p>

Table B2

Essentials and Outcomes Met with DNP Project

Semester	Plan	Implementation	Dissemination
Spring 2020	Essentials: 1,2,3, 4, 5, 6 Outcomes: 1, 2, 3, 4, 5, 6		
Summer 2020	Essentials: 1,2, 3, 5 Outcomes: 1, 2, 3, 4, 5, 6		
Fall 2020		Essentials: 1, 2, 3, 4, 5, 6, 7, 8	

		Outcomes: 1, 2,3, 4, 5, 6	
Spring 2021			Essentials: 1, 2, 3, 4, 5, 6 Outcomes: 1, 2, 5, 6

See Table 1 – Legend

Table B3

Essentials and Outcomes Met with DNP Project per Semester

Semester	Essentials	Outcomes
Spring 2020	Literature matrix deciphered through countless evidence-based research to facilitate approach for DNP paper/project. Analyzed data, utilized/developed spreadsheets, timeline, approach for conducting the research project, collaborated with professor, site champion.	Integrated nursing science in the acquisition of data to support the project goals, developed a plan for implementation, evaluation and dissemination, utilized technology to research data and develop tools necessary to conduct the research, identified most current evidence-based research for given topic, and collaborated with site champion, Heart Failure Coordinator, and DNP professor.
Summer 2020	Worked from the literature matrix to create background data, systematically organized the data for presentation within the paper, analyzed the data and cross-referenced with the most current evidence-based data available. Reviewed health policy for assurance of approach and expected outcomes.	Fine-tuned goals and objectives, revisited timeline, revised collection tools, applied current evidence-based research with Heart Failure Coordinator at project site. Collaborated with professor for areas that required modification.
Fall 2020	Utilized evidence-based research as a springboard for data collection, ensured HIPPA compliance with data collection, patient communication, evaluated	Cross-reference outcome data for areas of improvement, identified areas that needed to be expounded upon, identified areas of improvement in

	<p>data for areas that required change, utilized IT at project site to fine-tune data collection, met with project site champion to discuss current findings, collaborated with IT, site champion, Heart Failure Coordinator for areas of concern, began synthesis of data, finalized data for discussion/review with site champion.</p>	<p>delivery of healthcare to specific population, developed graphs for delivery of outcomes data utilizing spreadsheets, graphs. Coordinated with site champion and Heart Failure Coordinator for final summation of data.</p>
<p>Spring 2021</p>	<p>Continued research to assure outcomes were evidence-based, developed method for dissemination of data/project, developed graphs for displaying outcomes utilizing Information Technology available, provided evidence of need to continue the research and expand to other patient populations, collaborated with other members of the DNP program via poster presentation.</p>	<p>Presented data based on evidence-based research, identifying areas of improvement/expansion of project, presented data in a format that was easily discernable, leaving the window open for continued research, provided an avenue for utilizing the same format for other disease processes in an effort to improve quality of care and provide positive patient outcomes, and collaborated with other healthcare professionals to address/identify these areas.</p>

Appendix C



Quality Improvement/Program Evaluation Self-Certification Tool

Purpose:

Projects that do not meet the federal definition of human research pursuant to 45 CFR 46 do not require IRB review. This tool was developed to assist in the determination of when a project falls outside of the IRB's purview.

Instructions:

Please complete the requested project information, as this document may be used for documentation that IRB review is not required. Select the appropriate answers to each question in the order they appear below. Additional questions may appear based on your answers. If you do not receive a STOP HERE message, the form may be printed as certification that the project is "not research" and does not require IRB review. The IRB will not review your responses as part of the self-certification process.

Name of Project Leader:

Kay Boykin

Project Title:

Educating Caregivers of Patients with Heart Failure in Reduction of 30-day Hospital Readmissions

Brief description of Project/Goals:

educate the caregivers on care of the patient with heart failure. Goal to ascertain if educating the caregivers reduces hospital 30-day readmissions, thus saving the facility untold dollars spent in penalties imposed by Medicare.

Will the project involve testing an experimental drug, device (including medical software or assays), or biologic?

Yes **No**

Has the project received funding (e.g., federal, industry) to be conducted as a human subject research study?

Yes **No**

Is this a multi-site project (e.g., there is a coordinating or lead center, more than one site participating, and/or a study-wide protocol)?

Yes **No**

Is this a systematic investigation designed with the intent to contribute to generalizable knowledge (e.g., testing a hypothesis; randomization of subjects; comparison of case vs. control; observational research; comparative effectiveness research; or comparable criteria in alternative research paradigms)?

Yes **No**

Will the results of the project be published, presented or disseminated outside of the institution or program conducting it?

Yes **No**

Based on your responses, the project appears to constitute QI and/or Program Evaluation and IRB review is not required because, in accordance with federal regulations, your project does not constitute research as defined under 45 CFR 46.102(d). If the project results are disseminated, they should be characterized as QI and/or Program Evaluation findings.

Appendix E Project TimeLine

