

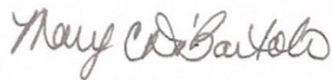
Running Head: PALLIATIVE CARE TO HOSPICE ADMISSION WORKFLOW
PROCESS

Implementing a Standardized Workflow Process to Increase the Palliative Care to

Hospice Admission Rate

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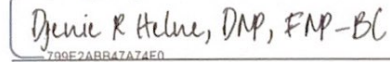
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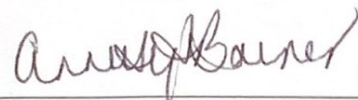


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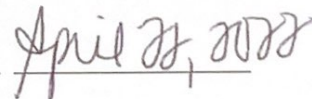
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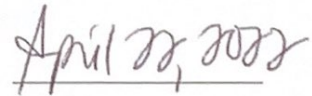


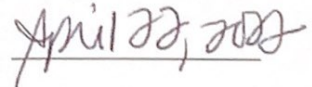
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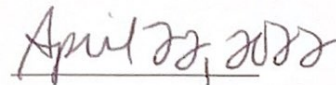
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PALLIATIVE CARE TO HOSPICE ADMISSION WORKFLOW PROCESS

**Implementing a Standardized Workflow Process to Increase the Palliative Care to
Hospice Admission Rate**

By

Charissa Yvette Boyd

Dissertation submitted to the School of Nursing
of Salisbury University in partial fulfillment of the requirements
for the degree of
Doctor of Nursing Practice

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PALLIATIVE CARE TO HOSPICE ADMISSION WORKFLOW PROCESS

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By

Charissa Yvette Boyd

2022

Dedication

First, I want to honor and thank my Lord and Savior, Jesus Christ. He has given me the strength and courage to complete this journey. I am dedicating this Doctor of Nursing Practice quality improvement project to the most important people in my life, my children, who inspire, encourage, and fuel my spirit. To my husband, thank you for your support, encouragement, and belief in me. To my mother and late father, my heart, passion, drive, work ethic, and commitment to help others is your living legacy.

Acknowledgements

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Abstract

Hospice care is an underutilized medical benefit, with more than 50% of Medicare beneficiaries receiving less than 30 days of hospice service in 2018. Underutilization of hospice care decreases quality of life and contributes to higher healthcare costs related to uncontrolled illness-related symptoms. Ensuring timely hospice admission contributes to the Institute of Medicine's six aims of healthcare improvement. Palliative care patients transitioning to hospice care within this non-profit organization were experiencing extended wait times while transitioning to hospice care leading to uncontrolled physical, emotional, social, and psychological symptoms as well as death without the support of hospice services. This Doctor of Nursing (DNP) quality improvement project sought to determine whether implementing an evidence-based standardized workflow process with urgency levels and chart completion mandates could increase the hospice admission rate within 3 months of implementing the new workflow process. A convenience sample of all current palliative care patients $n = 50$ transitioning to internal hospice was used for this quality improvement project. This quality improvement project applied Lewin's change theory to understand the stages of organizational change and Deming's Plan Do Study Act (PDSA) cycle to implement the process improvement. Non-parametric statistical tests were used to analyze pre-post intervention data to evaluate the hospice admission rate outcomes. Data analysis concluded that more palliative patients were admitted to hospice and the average time from hospice referral to hospice admission was less in the post-intervention vs. the preintervention group. Standardizing the workflow process when transitioning palliative care patients to hospice services increases the

admission rate and decreases the time to hospice admission allowing for early symptom management, improved quality of life, and lower healthcare costs.

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Implementing a Standardized Workflow Process to Increase the Palliative Care to Hospice Admission Referral Rate

Introduction

The Centers for Disease Control and Prevention (CDC, 2020c) defines a chronic disease as “conditions that last 1 year or more and require ongoing medical attention or limit activities of daily living or both” (para 1.). The progressive nature of chronic diseases and the treatments necessary to manage the illnesses cause burdensome symptoms. The physical, psychological, and emotional effects of these diseases and their treatments require management through specialized care. To control symptoms and maintain functional status and emotional stability, individuals can elect to integrate palliative services into the plan of care. Palliative care can be received in conjunction with aggressive treatment plans and is often a precursor to hospice care. As chronic disease advances to an untreatable state, comfort care (as opposed to curative care) becomes the focus and sets the stage to transition from palliative care to hospice services. A delay in the transition from palliative care to hospice prolongs suffering related to symptom burden, increases costs related to the end-of-life care (Obermeyer et al., 2014), diminishes the quality of life, impedes interdisciplinary hospice team support, and contributes to the general underuse of hospice services in this population (Cagle et al., 2020; Cross et al., 2019; Fine, 2018).

Background

In the United States, six out of 10 adults have a chronic disease, and four out of 10 adults have two or more chronic diseases (CDC, 2020b). Of these chronic illnesses, cancer, diabetes, and heart disease are among the leading causes of death (CDC, 2020b).

These diseases are the primary source of physical, emotional, and psychological symptoms such as, anxiety, depression, fatigue, pain, weight loss, and shortness of breath (Senanayake et al., 2017). Over time, the progressive nature of these illnesses can lead to increased symptom burden, decreased quality of life, and declines in cognitive and functional status (Bringsvor et al., 2018, Siboni et al, 2019).

Individuals with advanced stage chronic illness have higher utilization of healthcare expenditures and loss of work productivity. According to the CDC (2020c), 3.15 trillion dollars is spent annually on people with chronic disease and mental health disorders. Specifically, cardiovascular diseases cost the United States 330 billion dollars annually in medical costs and lost work productivity (Benjamin et al., 2018). Multiple studies have also demonstrated escalating healthcare costs related to chronic disease symptom burden (Dufour et al., 2017; Nipp et al., 2017; Stephenson et al., 2017; Streur et al., 2018), resulting in a negative impact on survivorship.

To manage the troubling symptoms of chronic disease, patients or their legal decision-makers can elect to add palliative services as complementary care while pursuing aggressive treatments. In the United States., to access palliative care services, patients either enroll in hospice or a palliative care program (Riggs et al., 2016). To initiate a palliative care referral, the patient or legal decision-maker will have a lengthy discussion with the primary care provider or specialist about the patient's need for more specialized care; if both parties agree, the provider will initiate a palliative care referral. The World Health Organization (WHO, 2020) estimates that approximately 40 million people globally could benefit from palliative care services, but only about 14% of these individuals receive palliative care services. The WHO (2020) defined palliative care as

“an approach that improves the quality of life of patients (adults and children) and their families who are facing problems associated with life-threatening illness” (para. 1), which focuses on the management of symptoms related to progressive chronic illness.

Patients receiving care in a palliative care program also discuss goals of care, engage in advanced care planning, and receive appropriate referrals for spiritual, psychological, and social service needs. As the chronic disease advances to a terminal state, whereby worsening physical symptoms and cognitive decline develop, palliative care can be an early intervention supporting the transition to hospice services. The early recognition, recommendation, and admission to hospice services can expedite specialty care initiation for terminally-ill individuals under the hospice benefit.

Hospice care is a more comprehensive service involving a team approach. It is defined by the Centers for Medicare and Medicaid (2020) as “a program of care and support for people who are terminally-ill (with a life expectancy of six months or less, if the illness runs its normal course) and their families” (p. 4). In 2018, 1.55 million Medicare beneficiaries received hospice care (National Hospice and Palliative Care Organization, 2020). Individuals and their caregivers receiving hospice services have lower healthcare costs (related to medication and durable medical equipment coverage), improved physical, emotional, and psychological symptom management from advancing disease, have social and community needs met with the addition of a social worker, and demonstrate an overall improvement in quality of life (Davano et al., 2019; Kleinpell et al., 2019). Individuals electing the transition from palliative care to hospice services also noted additional benefits of symptom relief, enhanced quality of life, optimized care

coordination, lower healthcare costs, and increased bereavement support. To achieve this goal, an admission process that is efficient, seamless, and without delays is essential.

Problem Statement

Patients currently on palliative care service at the non-profit hospice and palliative care organization are experiencing a delay in the transfer process from palliative care to hospice services. This delay results in increased healthcare costs, delayed symptom relief, diminished quality of life, and in some cases, reduced probability of a “good death” (needless suffering before death) at the end-of-life. Using data from actual cases demonstrating the delay within the organization of patient's transition from palliative care to hospice services, the non-profit organization recognized the importance of the proposed Doctor of Nursing Practice (DNP) quality improvement project. The DNP student collaborated with the Chief Officer for Performance, Compliance, and Cultural Operations which resulted in support for the DNP project.

Purpose Statement

The purpose of the DNP quality improvement project is to determine if standardizing the workflow process of internal palliative care to hospice care patient transfers will increase the referral completion rate within three months (See DNP project timeline, Appendix A) of implementing an electronic medical record (EMR) time constraint. Evidence from the literature review (See PRISMA diagram, Appendix B) supports standardizing processes thereby resulting in a more efficient workflow (Fabre & Anderson, 2020); Schwartz et al., 2020; Spar et al., 2018).

Clinical Question-PICOT

The population, intervention, comparison, outcome and time (PICOT) statement for the Doctor of Nursing Practice (DNP) project is as follows: Among palliative care patients (P), does the use of a standardized internal workflow process for palliative care to hospice care referrals (I) increase the number of more timely, appropriate hospice admissions and decrease the incomplete referral rate (O), compared to the current non-standardized workflow process (C) within 3 months (T)?

Synthesis of the Literature

A literature review was performed to evaluate the current literature regarding the benefits of palliative care prior to hospice, standardization of a workflow process, and the benefits of hospice care. The literature search was performed using Salisbury University ESBCO for students, including Academic Search Ultimate, Academic Search Complete, CINAHL Plus with full text, Medline, and Medline with full text. Key search terms using the Booleans AND, OR, NOT, the following terms were searched in various combinations: healthcare, hospice, hospice care, palliative, palliative care, admission, early, delayed, timely, late, missed, benefits, advantage, impact, positive effects, utilization, cost savings, workflow, referral, standardization, standardize.

Five hundred sixty-five articles in total were returned. After removal of the duplicates, applying publication time limit range of 2015–2020, and limiting articles to the United States only, English, peer-reviewed, scholarly, and full text, 92 results remained. Appendix C illustrates the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA, Page et al., 2021) outline used in the literature review search process.

Summary of Evidence

Extended wait times for healthcare services are a universal problem for healthcare systems worldwide (OECD, 2020). Palliative care patients at the hospice organization are experiencing unreasonably long transfer times when transitioning to internal hospice services related to non-standardized workflow processes within this organization. There is significant evidence demonstrating that palliative care services prior to hospice care increased hospice admissions rates and resulted in a longer length of stay while on hospice service (Chettiar et al., 2018; Lilley et al., 2018; Riggs et al., 2016; Rosenblum et al., 2018; Schneider et al., 2018).

Hospice care is a critical service for patients at the end of life. Increasing the patient length of stay on hospice care with a more efficient process results in an improved quality of life and probability of death at home or in a hospice center (Mulville et al., 2018); a decrease in unnecessary utilization of urgent healthcare services, and an overall decrease in healthcare costs related to emergency room visits and hospitalizations (Fiala et al., 2019; Fukui et al. 2018; Sanoff et al., 2017; Watcherman et al., 2018). Lastly, longer lengths of stay on hospice care also strengthen an organization's profitability.

Five studies demonstrated that palliative care increases the length of stay on hospice care (Chettiar et al., 2018; Lilley et al., 2018; Riggs et al., 2016; Rosenblum et al., 2018; and Schneider et al., 2018). These longer lengths of stay are vital to patients' improvements in quality of life, symptom relief, and a reasonable level of comfort transitioning to death. Fabre and Anderson (2020) used a combination of workflow redesign, a referral tracking system, training, and an evidence-based tool to decrease delays in referral times and increase referral completion rate. Five additional studies also

concluded that standardizing a workflow process improved patient care by decreasing omission errors, decreasing transfer times between care units, and improved patient care communication between medical providers sending and receiving patients from different units (Feng et al., 2018; Fryman et al., 2017; Halverson et al., 2020; Schwartz et al., 2020; Spar et al., 2018). All these care improvements from a timelier and more efficient standardized workflow process can improve patient comfort, safety (decrease mortality rates related to errors), as well as decrease healthcare costs through decreasing unnecessary use of healthcare resources. A table of evidence is included in Appendix C summarizing the supporting evidence from the literature review.

Theoretical Framework & Quality Improvement Model

Hospice services are an integral part of the care for patients with advanced illness. Patients currently on palliative care service need to experience a timely, efficient process when transitioning to hospice services within the organization. The process of transferring palliative care patients to hospice services requires innumerable processes at the micro and macro levels of this organization. To understand the organizational changes throughout this DNP quality improvement project, a theoretical framework is necessary to provide "structure within the established boundaries by identifying the concepts included in the project and, depending on the framework, how they are related to one another" (Bonnell & Smith, 2018, p. 94). Theoretical framework and quality improvement models are essential components of the Doctor of Nursing Practice project, providing support and guidance.

The proposed organizational changes to practice were facilitated by Kurt Lewin's change theory (1947) from the discipline of psychology. Lewin's change theory was

selected because it demonstrated how organizations mobilize staff toward change.

Lewin's change theory emphasizes three stages of linear progression: unfreeze, moving, and freeze (also known as refreezing in more recent literature). Lewin's theory has three main concepts: driving forces, restraining forces, and equilibrium. An imbalance in the equilibrium disrupts the status quo. Furthermore, exerting greater force from driving forces overcomes resistant forces, leading to change readiness. Positive staff behavioral changes are the first sign of a shift in equilibrium. Building on the foundation of positive behavioral changes, the process change is ready for implementation. Finally, the new process is institutionalized, becoming the new normal.

Unfreezing

In the first stage of Lewin's theory, there is an emphasis on creating awareness among the staff that the current process (status quo) is no longer productive. Lewin (1947) defined this stage of unfreezing as "breaking the habit" (p. 32), which breaks down complacent and sanctimonious staff behaviors. In this stage, driving forces (positive forces moving toward change) must be greater than resistant forces (obstacles to change) to unfreeze equilibrium (Wojciechowski et al., 2016). Within the organization, death before hospice admission, patient and caregiver dissatisfaction, and lost revenue drive forces to disrupt equilibrium (positive forces and obstacles are balanced). During this unfreezing stage, it is vital to communicate the benefits of efficient palliative care patient admissions to hospice services and how this same efficiency will benefit the staff. Delays in care, patient and caregiver dissatisfaction, and lost revenue are driving forces within the organization. Resistant forces within the organization are individuals trying to maintain the status quo, lack of trust, self-interest, expanding job responsibilities, and fear

of the unknown. Positively impacting the resistant forces with change champions, transparency, communication, and education will, drive behavioral changes that encourage acceptance and adaptation of the new process changes (Tetef, 2017).

Moving

This next stage of Lewin's theory describes movement which occurs during the implementation phase. During this transitional stage, implementation of the time constraint into the EMR will occur. The new process changes cause staff uncertainty and fear, and individuals need support adopting the new behaviors. In supporting behavioral changes, the organization can take the following actions: educate the staff about the new process; support individuals that are struggling with new changes; provide and accept staff feedback about the new steps of the process; use the feedback to make improvements; reinforce the benefits; empower change champions to support and encourage their peers; and, maintain transparency and communication with impacted staff throughout the process (Connelly, 2020).

Freezing

Lewin (1947) defined freezing as "permanency, solidifying the process change into the organization's culture" (p.35). In this final stage, the staff has internalized the behavioral changes necessary to sustain the new process of assigning a time constraint during initiation of the internal admission process to transfer a palliative care patient to the organization's hospice service. Supporting the staff using change champions, reinforcing the importance of the change (Connelly, 2020), celebrating success, retraining when necessary, and monitoring key performance indicators (Wojciechowski et al., 2016) are all actions necessary for sustainability.

Quality Improvement Model

Quality improvement in healthcare is the combined efforts of “healthcare professionals, patients, and their families, researchers, payers, planners, and educators—to make the changes that will lead to better patient outcomes (health), better system performance (care), and better professional development” (Batalden & Davidoff, 2007, p. 2). Using a quality improvement model is an effective way to assess the validity of a process change and improve the patient’s healthcare experience and healthcare outcomes as well as reduce healthcare costs (de la Perrelle et al., 2020; Inkelas & McPherson, 2015). Edward Deming’s Plan, Do, Study, Act (PDSA) model (Institute for Healthcare Improvement, n.d.; Moen & Norman, 2010) guided the implementation for this project. According to the Institute for Healthcare Improvement (IHI, n.d.), using the PDSA model tests change “by planning it, trying it, observing the results, and acting on what is learned” (para. 1). This model provided valuable insight, knowledge and tested the time constraint intervention's effectiveness and provided data from other areas and processes that can benefit future quality improvement projects.

Project Design

After performing the root cause analysis using an Ishikawa diagram in February 2020, factors contributing to delays in the palliative care process were evident. This valuable quality improvement tool, also known as a Fishbone diagram, identified possible causes for a problem or effect (Institute for Healthcare Improvement, n.d.). As a result of this meeting, the DNP student refined the focus of the DNP project. A needs assessment was later performed between September and November 2020, resulting in identifying process and knowledge gaps within and around the palliative care process. The final

purpose statement was clear from this data: to determine if standardizing the workflow process of internal palliative care to hospice care patient transfers will increase the referral completion rate within three months of implementing an EMR time constraint.

Quality improvement uses data as the primary source to improve healthcare outcomes and systems (Moran et al., 2020). DNP projects require an implementation framework to guide the process. According to Institute for Healthcare Improvement (IHI, n.d.), “the PDSA cycle is shorthand for testing a change by developing a plan to test the change (Plan), carrying out the test (Do), observing and learning from the consequences (Study), and determining what modifications should be made to the test (Act)” (para 1.). Therefore, the PDSA model guided planning the new workflow process, identified steps to test the process, evaluated the outcome and utilized findings to make necessary changes for future PDSA cycles.

The organization has an internally created hospice checklist specific to the organization's processes. The checklist was already being updated at the start of the DNP quality improvement project by a separate workgroup. The checklist requires specific documents to be collected during the hospice admission process. The hospice checklist within the organization increases the likelihood of a patient being appropriate for hospice and decreases the errors related to missing documents. The updated checklist is also a part of the new standardized workflow process but is not an intervention for this DNP quality improvement project.

Methodology

Ethical Issues

This quality improvement project focused on improving the transition of care through standardizing the workflow process and implementing a due date in the EMR, thereby improving the time it takes to transfer a patient's care from palliative to hospice care. There was no direct patient involvement. However, to address any potential ethical concerns, the project protocol was submitted to Salisbury University Institutional Review Board (IRB) and received approval in April 2021 (see Appendix D). The DNP student has completed the Collaborative Institutional Training Initiative (CITI) and followed all Health Insurance Portability and Accountability (HIPAA) regulations to access, analyze, and store patient data.

Setting and Population

The project setting was a non-profit hospice and palliative care organization with over 1,000 employees and offices in the Washington metropolitan area. The hospice organization has provided palliative, hospice, and counseling services to nearly 120,000 patients and families. This organization provides palliative care and hospice services wherever the patient calls home; this includes skilled nursing facilities, assisted living facilities, and acute care hospital settings. This DNP project only utilized data from internal palliative care patients with a physician's order and pending admission to this organization's hospice services.

The participants for this project included all current patients admitted to palliative care services at the organization regardless of whether they have health insurance coverage. There were no exclusions for marital status, socioeconomic status, race,

gender, age, ethnic group, primary language, or education level. Data collection for this DNP project occurred during the period of April 1, 2021, through December 1, 2021, with ages ranging from one day old through adulthood (18 and older).

Quality Improvement Intervention

The Agency for Healthcare Research and Quality (2012) defined a quality improvement intervention as “a change process in health care systems, services, or suppliers for the purpose of increasing the likelihood of optimal clinical quality of care measured by positive health outcomes for individuals and populations” (p. 3). The plan for this quality improvement DNP project was to implement a standardized workflow process using a time constraint. A workflow process is a “series of activities or tasks that need to be completed sequentially or in parallel to achieve a business outcome” (Integrify, n.d., para 1.). A time constraint within a computerized process assigns a start and end due date to a given task or set of tasks (Eder et al., 1999; Jones & Regehr, n.d.).

During the planning stage of the PDSA, the DNP student discovered that the MyUnity (Hospice patient EMR) EMR program could not track hospice admissions from the organizational palliative program. This discovery led to a meeting in November 2020 with the information technology business analyst and the clinical informaticist. The result of this meeting was a proposal to create a new referral source option specifically for internal palliative care patients referred to the organization's hospice service. Finalizing the new option's implementation required approval from the chief growth officer and an administrator at MyUnity. Once approved, the information technology business analyst and clinical informaticist tested functionality and report retrieval during a live Zoom demonstration.

Rationale for Intervention

While analyzing causes of palliative care patient delays during transfer to organization's hospice service, the DNP student discovered a variation in the steps taken among referral specialists performing the process. The most critical reason to standardize workflow is to reduce variation in a process; such variations in a healthcare process directly affect care and quality outcomes (Lavelle et al., 2015). Another reason to standardize the workflow process, particularly with a time constraint at this organization, was to prioritize the hospice referral based on the level of urgency. This distinction of urgency can be understood and actualized every day in hospital emergency rooms that prioritize patient care services based on the patient's condition. Assigning priority levels uses the level of a patient's need, services required, or service development (Chalkidou et al., 2016). The final reason for a standardized workflow process with a time constraint is that the time constraint requires the individual to perform the task to complete the process within the time frame assigned to that task. The time constraint established in the EMR functioned as an alert on the dashboard when the task extended outside of the assigned due date.

Implementation

The collaborative workgroup involved the director of patient access, the education and quality assurance team liaison, the clinical ambulatory specialist, the medical director of palliative care and the DNP student who finalized the standardized workflow process for admitting palliative care patients to the organization's hospice service. Additional collaboration with the chief growth officer, clinical ambulatory specialist, and the

medical director of palliative care established the due dates for the time constraint within Aprima (palliative care patient EMR).

The chief growth officer is responsible for overseeing the organization's daily business operations, including a corrective action plan for ineffective processes within the referral center. The director of patient access is responsible for the daily operational functions of the referral center, works under the directive of the chief growth officer and is vital to securing buy-in from the referral specialists who perform the daily hospice admissions. The education and quality assurance team liaison monitors the referral specialist compliance to organizational processes. The clinical ambulatory specialist is an informatics nurse with the expertise and administrative authority to assign dates to each time constraint's urgency level. Lastly, the chief growth officer, the medical director of palliative care, and the DNP student collaborated to create the due date for each time constraint's urgency level. The urgency levels were defined as follows:

- Routine: no urgent needs, symptoms well-controlled, and support systems in place (72-96 hours)
- Priority: at least one urgent need, symptoms unstable, or unstable/no support system (48-72 hours)
- Urgent: immediate needs, severely unstable symptoms, stable/unstable support system (24-48 hours)

A support system includes personal care deficits due to lack of self-care or caregiver availability and caregiver burnout. Urgent needs and symptoms overlap and include personal care deficits, safety concerns, symptom comfort, or discomfort related to the patient's life-limiting illness and whether the patient has signs of imminent death. The

referring organizational palliative provider notes the referral with the appropriate level of urgency in Aprima. The patient's palliative care provider assigns the urgency level on the referral because of their intimate knowledge of the patient's needs obtained during the consultation.

The workgroups finalized the standardized process with the time constraint in spring of 2021. The time constraint implementation required administrative rights, in-depth training, and extensive knowledge about the Aprima EMR system, and because of these requirements, the clinical ambulatory specialist performed this step during the planning stages in spring of 2021. In the summer of 2021, the DNP student and clinical ambulatory specialist finalized the training plan, including training session content, the number of training sessions, the dates for the sessions, and appropriate attendees for the training. That meeting resulted in five training sessions scheduled for August. In addition to implementing the time constraint in the EMR, the clinical ambulatory specialist provided formative educational training sessions to the palliative care providers and referral specialists on the new standardized workflow.

Data Collection

Baseline palliative patient to hospice transfers data were collected (pre-implementation) from May 2021 through December 2021. Three months after implementing the standardized workflow process, the DNP student studied the pre-and post-implementation data retrieved from the palliative care patient EMR database, Aprima (Appendix E contains the steps to retrieve the data from Aprima). The hospice admission data for the palliative care patients was retrieved from MyUnity (The steps to

retrieve this data are in Appendix F). Finally, Excel spreadsheets were used for all data collection and stored on the organization's password-protected laptop.

Organizational System Analysis (SWOT)

To assess the organization's culture and readiness for this quality improvement initiative, a SWOT analysis tool was used to evaluate the organization's strengths, weaknesses, opportunities, and threats (SWOT) which are presented in Appendix G. "The SWOT analysis is an assessment of both the internal and external attributes and threats to the phenomenon of interest" (Moran et al., 2020, p. 130). The organization evaluated new EMR systems for all service lines in an effort to streamline processes within the organization, including palliative care and hospice. An objective of the new palliative care EMR was to verify patient insurance benefits for these two service lines. Another expected benefit of the new EMR system was its ability to track billable and non-billable palliative care and hospice visits accurately. The improved accuracy of the new billing system built into the new EMR would facilitate higher financial yield from insurance reimbursement and improve palliative provider productivity accuracy.

The assessment also uncovered gaps in the referral specialist's understanding of palliative care services and the ability to identify appropriate palliative care patients versus just chronic pain management patients and the appropriate components for a complete palliative care referral. Lastly, the analysis identified non-standardized palliative care patient admission and transition to hospice care processes among the referral specialists. A lack of new hire orientation education and no continual quality improvement opportunities within the organization were causes that contributed to the gap in the referral specialist's understanding of the palliative care service line. The

inconsistencies in palliative care patients' transition process to internal hospice services became the impetus for this quality improvement project.

The organization had recently undergone a restructuring of its top leaders, including a newly appointed chief executive officer, chief medical director, chief strategic planner, and chief of business operations. This organizational restructuring created new opportunities for evidence-based and quality improvements in patient care and the processes used to initiate, sustain, and discontinue care services. The restructuring also created the ideal situation for the introduction, implementation, and sustainability of this DNP quality improvement project.

This organization's strengths included a large team of nurse practitioners' and physicians' providing palliative care services, and well-established hospice program to support patients transitioning from palliative care services. Furthermore, recent changes in chief leaders in the organization who have communicated transformational leadership skills of open communication, team collaboration, transparency, and openness to process and program changes with the ultimate goal of providing the highest quality in care.

Although the palliative care program at this organization has had a strong history of longevity within the specialty of hospice and palliative care, the SWOT analysis identified the two weaknesses/threats within the palliative care program. They were no system in place to verify patient's coverage for palliative care leading to low or no financial reimbursement and inaccurate provider productivity reports. Other threats discovered during analysis included palliative care patients who were dissatisfied with the palliative and hospice admission process. A sole palliative provider practice and non-

standardized palliative care admission and transition of care processes were also weaknesses identified during SWOT analysis.

Finally, additional opportunities to positively impact patient care included standardizing palliative referral admission processes, standardizing palliative patient's admission process to internal hospice, and creating a pilot that adds a social worker and register nurse building an actual team to care for the palliative care patients.

Timeline

This DNP quality improvement project took place over a two-year period. The project began in November 2019 with the idea of improving the timeliness of patients to palliative care services, the timeliness of palliative care patient admissions to internal hospice services, as well as improving insurance verification and reimbursement for palliative care services. In 2020, the organization underwent a significant overhaul in leadership during the following year, which involved modification of organizational goals. These changes included the roll-out of a new service line, and two new EMR systems. It also involved taking a closer look at inefficient and absent processes that contributed to the lack of financial success and the decline in the organization's quality of care.

A formal introduction of the DNP quality improvement project occurred in January 2021, followed by the SWOT analysis in February. The SWOT analysis discussion finalized the focus of the DNP quality improvement project on the palliative patient transition process to internal hospice services. Performing an additional literature review revealed evidence supporting a due date time constraint as an intervention to improve the timeliness of hospice admissions from palliative care services. After

presenting supporting evidence from the literature review for the due date intervention in fall of 2020, the organization's team members and stakeholders approved the supporting evidence and the intervention choice. (Appendix A is the concise implementation and completion timeline for this DNP quality improvement project).

Institutional Review Board Approval

The DNP student received approval from The Salisbury University Institutional Review Board for this DNP quality improvement project on April 21, 2021. The hospice organization accepted Salisbury Universities Institutional Review Board approval letter to satisfy their internal organizational requirements for the Institutional Review Board.

Project Implementation

Guided by Deming's PDSA model, the QI project entered the "do" phase, operationalizing the objectives of training sessions, assigning urgency levels and time constraints to the palliative care to hospice care referrals. One of the critical success factors necessary for implementation was adequate training session attendance of end-users (palliative providers and referral specialists). The DNP student achieved objectives with four out of five training sessions containing a mix of palliative care providers and referral specialists along with the completion of a Zoom recording. The archived Zoom recording assisted absent individuals in accessing the new workflow process, thereby improving useability and reinforcement of the new process.

Other critical success factors were necessary to achieve timely implementation. These included numerous collaborative meetings with administrative and clinical staff, top and midlevel leadership, as well as technical personnel. Using the application of knowledge, skills, and leadership abilities, the DNP student collaborated and

communicated the purpose, plan, objectives, goal, and timeline successfully to begin implementation on September 1, 2021.

Barriers and Facilitators

A common barrier to project implementation includes unclear goals, inadequate resources to implement and sustain changes, insufficient time and stakeholder support, unestablished relationship with the organization, technology gaps, reluctance to change and political barriers (Moran et al., 2020). To overcome many of these barriers early in the planning process, the DNP student performed a SWOT analysis (revealed some barriers to change and the underlying organizational culture), clarified the project's objectives and goals, created preliminary timelines, and utilized the strength of the established relationship between the organization and the DNP student to garner champions in support of the QI project.

Resistance to change is another common barrier to implementation (Dunn, 2021; Melnyk et al., 2019; Moran et al., 2020). To overcome this obstacle, the DNP student applied Lewin's change theory to understand the current workflow process, uncover and clarify concerns surrounding the new process, and gain top-down support for the new workflow process. In addition, the DNP student developed new professional relationships with key stakeholders, using transparency, "emotional competence" (Moran et al., 2020), shared decision-making, effective communication, and problem-solving, which are all leadership skills necessary for a DNP-prepared nursing leader.

Summative Evaluation of Implementation Process

To support the new workflow process, instruct end-user on urgency level assignment, and technical support in Aprima, the clinical ambulatory specialist, availed

herself to support the project in these areas. In addition, the quality assurance specialist followed the monitoring plan (summative evaluation) of monthly audits to assess and monitor adherence to assignment of urgency levels and application of time constraints within Aprima. The clinical ambulatory specialist and quality assurance specialist assisted the DNP student with timely feedback, helping identify potential problems throughout the implementation phase as part of the monitoring plan.

Analysis and Discussion of Findings

The SPSS (Statistical Package for the Social Sciences) version 28 was used to perform all statistical data analysis for this quality improvement project. The total number of subjects from this convenience sample was 50 patient hospice referrals with $n = 17$ (34%) from the pre-intervention group and $n = 33$ (66%) from the post-intervention group. The two groups were entirely independent of each other with data collection occurring at different time frames; data were collected for the pre-intervention group from May to August of 2021, while the post-intervention group data were collected from September to December of 2021. Due to the small sample size and the non-randomized, non-normally distributed data, non-parametric statistical tests were used to analyze the sample data. The raw data were retrieved from an Aprima EMR generated report, transferred to an Excel spreadsheet, de-identified for patient privacy, and recoded for easy re-linkage, all within the password-protected organization-issued computer. This de-identified and recoded data from the Excel spreadsheet was uploaded to SPSS for analysis.

Analysis of Descriptive Characteristics of the Sample

Age for each of the subjects was available from the chart in years. Because assumptions for the *t*-test were not met, the Mann-Whitney U non-parametric test was used to analyze differences in mean age between the independent pre-intervention and post-intervention groups. There was a significant difference in age between groups, with the pre-intervention group being younger on average with a mean age of 72 ± 14 years compared to 82 ± 9 years in the post-intervention group ($p = .008$). The mean ages found among the two sample groups are reflective of individuals representing 50.3% of Medicare hospice beneficiaries enrolled in hospice care in 2018 (NHPCO, 2020). Using the Chi-Square statistic, gender was found to be nonsignificant ($X^2 = 0.89$, $p = .765$), as was ethnicity which was examined using Fisher's Exact test due to expected cell counts of less than 5 ($p = .883$).

As far as hospice admitting diagnoses, the Fisher's Exact test was again used as an alternative to the Chi-Square due to low expected cell counts. Results demonstrated significant differences between the pre and post-intervention groups (see Table 1). Patients in the pre-intervention group were more likely to have cancer (57.1% vs. 29.0%) and less likely to have cardiovascular-related illnesses (0% vs. 22.6%) and dementia (14.3% vs. 35.5%; $p = .043$) as hospice admitting diagnoses. Cancer, cardiovascular disease, and dementia are among the top 10 leading causes of death in the United States and the top primary diagnosis used to admit patients to hospice services (CDC, 2022a; NHPCO, 2020). The patients in both sample groups admitted from palliative care to hospice services within the organization also had higher rates of cancer, dementia, and cardiovascular-related illnesses than other hospice admitting diagnoses.

Analysis of Primary Outcome Variables

For the primary outcome variable of numbers of patients admitted to hospice, results showed an 11.5 % increase in the number of palliative care to hospice admissions in the post-intervention group compared to the pre-intervention group (93.9% vs. 82.4%); the chi-square statistic was 1.674 ($p = .321$). While these differences between the two groups were not statistically significant (see Table 2), the increase in cases referred for hospice care is clinically significant in terms of the overall benefit to patients and the organization. Specifically, the increased number of hospice patients receiving the benefits of hospice care not only contributes to the overall improvement in quality of life for the patient and family, but increased referral rates also contribute to the financial stability of the organization in terms of enhanced reimbursement, as well as achievement of its mission and core values.

The second primary outcome involved evaluating the numbers of Aprima charts closed or deactivated by the referral specialist as a result of the new standardized workflow process (post-intervention). Deactivating the chart is an essential step in the workflow process and also validates the appropriateness and completeness of the referral for admission to hospice services. The pre and post-intervention groups were compared using Chi-Square analysis where 78% of the Aprima charts were deactivated in the post-intervention group compared to 23% in the pre-intervention group; this difference was statistically significant ($X^2 = 14.275$, $p < .001$). This increase of 55% in charts being closed is a critically important improvement as it decreases the risk of errors related to missing documents necessary to admit an appropriate patient to internal organizational hospice services.

Analysis of Secondary Outcomes

The Aprima data report also contained chart completion time which is the response time from referral to chart deactivation (closed). The workflow process is directly reflected in this time frame and was compared between groups using the Mann-Whitney U test to assess for differences. The response time between groups was statistically significant, with more charts deactivated in the post-group with a mean time in hours 1261.48 ± 622.63 , while the meantime for the pre-group was 3496.42 ± 107.53 ($p < .001$). The response time appears to be improved from the statistics but is not likely due to significant differences in the sample size of the pre and post-groups (5 vs. 33).

Another finding from the Aprima report was the palliative to hospice referral completion date. Once the chart was deactivated, the EMR placed a date stamp. This date stamp was compared to the hospice start of care date in the MyUnity EMR, allowing one to track the number of days from referral completion to hospice admission. This information could be helpful in understanding whether the new workflow process also impacted the referral completion time. The Mann Whitney U test was used to perform this statistical analysis. On average, the time from hospice referral completion to hospice admission (referral completion) was accomplished in fewer days in the post-intervention group (mean days of 6.5 ± 11.7) compared to the pre-intervention group (mean days 16.1 ± 28.1). However, this difference was not statistically significant ($p = .771$).

Limitations

The data for this quality improvement was collected using a small convenience sample with a disproportionate number of patients in the pre-intervention group compared to the post-intervention group. Due to the small sample size and non-normal

distribution of the data, non-parametric statistical testing was indicated, and these tests are not as sensitive in detecting differences between groups (Kellar & Kelvin, 2013). When evaluating equivalence of the pre and post-intervention groups with regard to descriptive characteristics, significant differences were found in both age and hospice admitting diagnosis. Although the pre-intervention group was younger than the post-intervention group, the mean ages are representative of the overall Medicare hospice population. According to NHPCO (2020), 22.3% of Medicare hospice beneficiaries are 65 to 74 years old, while 28% are 75 to 84 years old. Individuals older than 85 comprise 33.4%, the largest proportion of Medicare hospice beneficiaries (NHPCO, 2020). These Medicare hospice enrollment statistics support the likelihood that the significant statistical difference found amongst the pre- and post-intervention groups mean ages were likely not a factor that influenced hospice enrollment.

The pre-intervention group was noted with significant differences in cancer, cardiovascular-related illness, and dementia as the principal diagnosis for hospice. According to NHPCO (2020), cancer is the principal hospice admitting diagnosis, followed by circulatory/heart related-illness and dementia. Although the pre-intervention group had more individuals with cancer, the overall sample size was 52% smaller than the post-intervention group. These findings would not have likely influenced the hospice enrollment.

Recommendations

According to a report published by the National Hospice and Palliative Care Organization (2020), approximately 28% of Medicare beneficiaries received seven days or less under hospice care, and approximately 40% of Medicare beneficiaries received

less than 14 days of hospice care services. These facts emphasize the importance of a more effective and efficient hospice admission process which can be obtained through standardizing the workflow process of transitioning patients from palliative to hospice care services. In addition, process standardization reduces time and cost waste, as well as increases employee effectiveness (Raveglia et al., 2020). Also, patients and families would likely benefit from a more efficient process, achieving earlier admission to hospice and subsequently more days on hospice service, and ultimately yielding a more significant benefit from this specialized care.

Since the year 2000, healthcare spending in the U.S. has more than doubled, reaching 3.8 billion dollars in 2019 (Kamal et al., 2020). In the United States, if Medicare beneficiaries increased participation in hospice by 30%, it is estimated that nearly 1.8 billion dollars could be saved annually in Medicare program spending (Powers et al., 2015). Therefore, enrolling individuals in hospice sooner benefits the patient and family and positively impacts the escalating healthcare costs in the United States related to chronic disease management

Economic Recommendations

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Implications for Practice/ DNP Role as Leader or Innovator

DNP Role as a Leader

Translating research evidence to clinical practice is “essential to safe, transparent, effective and efficient healthcare provision and meeting the expectations of patients, families, and society” (Curtis et al., 2017, p. 862). The DNP-prepared leader is academically prepared to research and select the appropriate evidence to plan, coordinate, and implement projects whose outcomes require statistical analysis and interpretation. These findings can then be applied to appropriate clinical practice settings to improve patient outcomes, decrease medical errors, and reduce healthcare costs. The DNP leader can also use those project outcomes and collaborate with other nursing leaders to investigate new research questions derived from the DNP projects, which may lead to additional inquiry and collaborative opportunities to improve the health of populations. This project demonstrates the importance of the DNP leader’s skills in detecting clinical problems, applying evidence-based research to find solutions for the problem, and

effectively collaborating with stakeholders and executive leadership to execute the process necessary to improve or resolve the problem.

Implications for Nursing Practice

The efficient admission of hospice patients from palliative care to hospice services is critical to improving patient symptoms and comfort while reducing both suffering and financial burden of care, including medication and personal care costs. These costs are covered (at no additional cost to the patient) under the Hospice benefit; this includes all medications related to the hospice admission diagnosis and the assistance of a home health aide to provider personal (bathing/dressing), up to five days per week. On average, one opioid prescription has an out-of-pocket cost of \$500 (Stagnitti, 2017). Medicare Part D currently has a beneficiary out-of-pocket expense requirement of 5%, that continues until the beneficiary reaches the maximum out-of-pocket expense of \$6650 (Cubanski et al., 2021). In addition, medications related to the hospice diagnosis and those used to relieve and maintain comfort are covered under the Medicare Hospice benefit. This translates to lower out-of-pocket expenses and cost savings for hospice patients (Stagnitti, 2017).

Organizations also benefit from efficiently admitting patients from palliative care to hospice. Unfortunately, palliative care insurance reimbursement is not consistent and, at times, does not sufficiently reimburse organizations for palliative care services. This lost revenue has a negative impact not only on the organization financially, but also on the productivity and value of the human capital that supports the palliative care service. Hospice reimbursement is a consistent payor source for organizations and provides a high-quality care option to patients and families with terminal illnesses. Routine home

care reimbursement for hospice services through Medicare in 2022 is reimbursed at \$203.40 per patient day and decreases with longer lengths of stay on hospice (Centers for Medicare & Medicaid, 2021). Non-profit organizations, on average, have a net profit margin of approximately six percent (Bazell et al., 2019). Not admitting patients to hospice services can lead to approximately \$12 per day profit loss. A Medicare beneficiary's average lifetime length of stay (LLOS) on hospice services in 2018 was nearly 90 days (National Hospice and Palliative Care Organization, 2020). During the implementation of this quality improvement project, five palliative care patients were not admitted, and with an average LLOS of 90 days, the organization lost over \$5,000 in net profit.

Process and Outcome Recommendations

The results of this quality improvement project support the standardization of a workflow process to increase hospice admission rates at this organization. Moreover, the integration of the new workflow process increased the rate of deactivation (closing) of the palliative care Aprima charts and decreased the time between referral and admission to hospice which, in turn, could lead to longer lengths of stay with higher profitability for the organization. These findings support the continued use of the new standardized workflow process for all palliative care patients transitioning to internal hospice care services. During project implementation, the DNP student closely observed palliative care admission procedures and found that this process could also benefit from a workflow evaluation to better ensure necessary documents, insurance verification, primary provider designation, and decision-maker designation information are a part of the admission

bundle. These elements are vital to an effective patient admitting process and fewer errors which can, in turn, lead to both delays and inappropriate hospice admissions.

Dissemination Plan

The palliative and hospice organization where this DNP QI project was conducted will have an opportunity to attend a live presentation on the findings of this project. The DNP student also plans to prepare a publication package within six months of graduation for submission to journals that focus on topics similar to that explored in this DNP quality improvement project. This would include hospice and palliative care journals, healthcare quality improvement journals, or journals with a focus on improvement through the use of electronic medical records.

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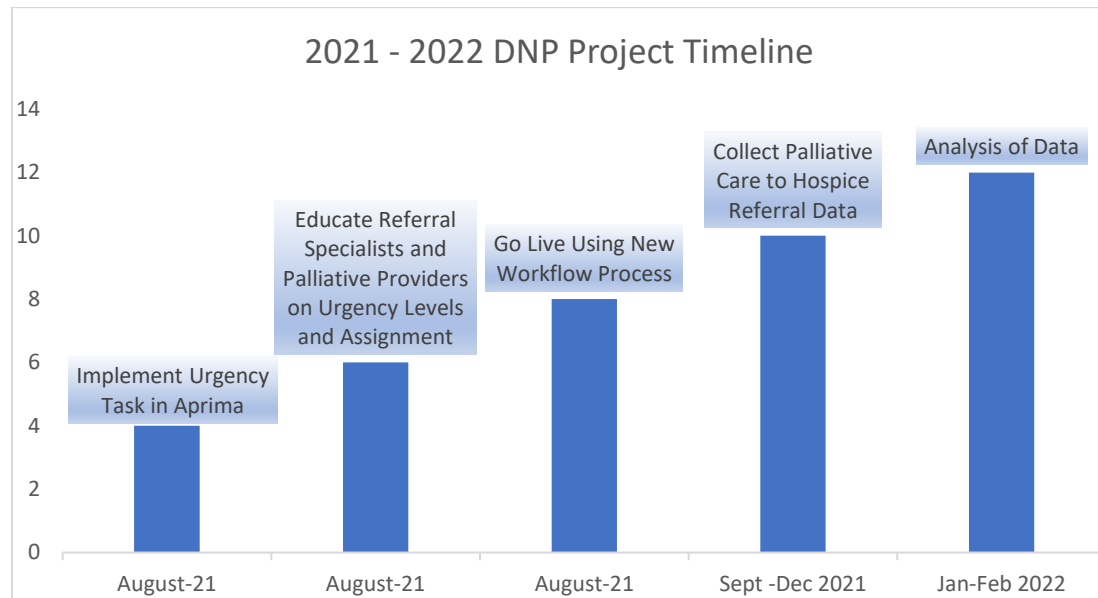
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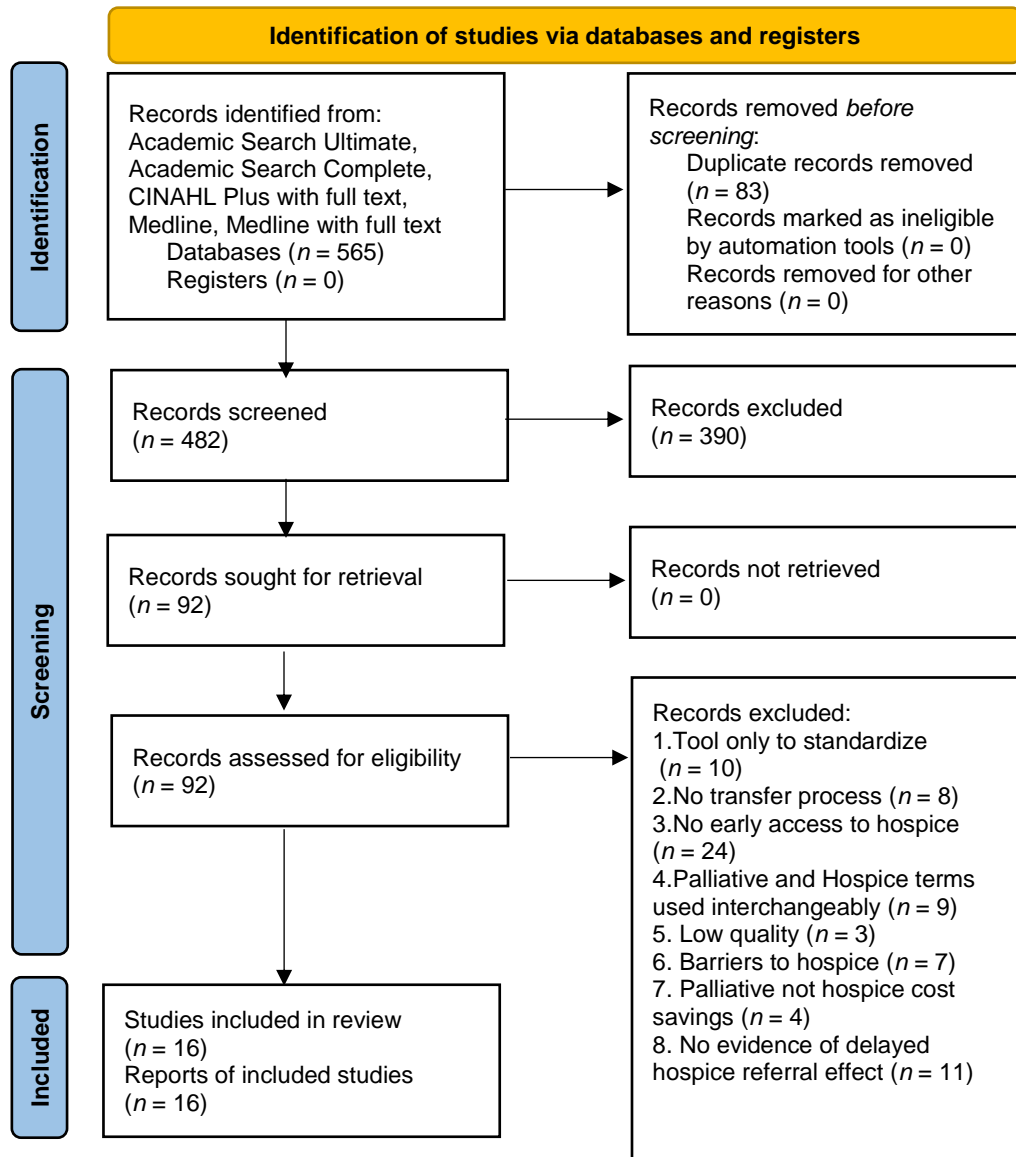
Appendix A

DNP Project Timeline



Appendix B

PRISMA 2020 Flow Diagram Standardize Workflow Process



Appendix C
Table of Evidence

Citation	Purpose/Design	Sample/ Setting	Findings/Results	Application to Clinical Practice & Limitations	Level of Evidence JHNEBPELOG (Dang & Dearholt, 2018)
Chettiar et al. (2018)	Determine how inpatient PC effects HC utilization & discharge outcomes (hospital readmissions, hospice admission) in ESRD pts Retrospective study	Medicare beneficiaries with ESRD from US Renal Data System 654 decedent cohort(survived) 2512 non-decedent (deceased) cohort	Post discharge hospice enrollment ↑ in PC referral pt vs UC pt (23.2% vs 2.8%) Higher rates of hospice enrollment in PC vs UC (HR, 8.3; 95% CI, 6.6 to 10.5)	PC consults ↑ likelihood of Hospice admission Limits: No significant ↓ HC costs between UC vs PC group Wide CI Cannot correlate outcomes with reason for referral/receipt of PC	Level 3B
Fabre & Anderson (2020)	Redesign internal processes to ↑ organizational accountability for referrals Care Coordination Model	Adult medicine department Large rural community health center, part of patient care home model	Pre-QI project: referrals preformed rate=71.8% vs post-QI project implementation rate=96.4% Pre-QI project: completed referral rate=31.3% vs	Used training, evidence-based tools, workflow redesign, implemented a referral tracking system, assigned accountability=↑ pt outcomes, ↓ referral delay time, ↑ rate of closed referral loop	Level 5B

	Quality Improvement	1-Physician, 3-Nurse Practitioners provided services to 6500 pts in 2018	post-QI project implementation rate=52%	Limits: Adults only Internal process only No external interoperability	
Fiala et al. (2019)	Examined cost savings at EOL for multiple myeloma pts on hospice care Retrospective study	Multiple myeloma Surveillance Epidemiology End Result (SEER) Medicare linked data set 2075 pts ≥ 65 y/o	Pt on Hospice=\$13,574 (p= < .0001) costs savings Median care costs \$9175 (on hospice care vs \$22,921(no hospice care) Maximal savings observed = enrollment ≥ 14 days prior to death	Hospice care = ↓ healthcare costs Longer LOS (14 days) = cost savings from hospice Limits: Survival not measured using time= bias Limited age range Medicare beneficiaries only Pt preferences not available to factor	Level 3B
Feng et al. (2018)	Utilize QI to improve sign-off general surgery resident to resident & resident to surgeon. Census log tool created & implemented	93 outside hospital transfers	Resident receiving prior notification baseline 21 yes/26 no. Post intervention 26 yes/ 11 no. Time to admission orders↓ notification 36.8 to 40.4 mins, without	Standardization process ↑ workflow Limits: Single organization case study	Level 5B

	Quality Improvement		notification 79.9 to 81.2 mins (p=00.29) Self-reported: Senior resident preparedness ↑ Notification 1.0 to 3.56. No Junior resident 3.54 to 4.2 notification Senior = 2.12 to 7.25 Junior 4.64 to 5.8 Junior p=0.48 Senior p=0.0048		
Fryman et al. (2017)	Evaluation of a standardized verbal handoff using IPASS Quasi-experimental design Quality Improvement	Hospital-general medicine N=50 residents Transfer between 1 thru 3-year residents Used multiple PDSA cycles	↓ Omission of pertinent information ↑ Pt safety EMR integration of IPASS tool Poor resident compliance	Standardized process Compliance ↑ with sustainability plan Limits: Single organization study Long-term sustainability problem	Level 5B
Fukui et al. (2018)	Examined effects of hospice care on HC costs and survival rates cost of Liver CA pts	≥ 65 y/o Medicare pts total 3385/1359 on hospice care	On hospice vs Ø hospice = ↑ hospital rates (73% vs 66%, P < .0001) ↓ hospital readmissions (median 2 vs 3, P < .001)	Hospice = ↓ HC costs No difference in mortality on hospice vs Ø hospice Limits:	Level 3B

	Cross-sectional study	Data from inpatient hospital and SNF	↓ hospital charges median (IQR), \$22,316 vs \$ 31,607; P < .0001)	Excluded pts death= < 30 days	
Halvorson et al. (2016)	Evaluated safety outcomes standardized workflow process for pt transfer between nursing units Quality Improvement (lean methodology)	Hospital Adult intensive & acute care pts	Standardized workflow with handoff tool (checklist)= ↓ intra-unit pt transfer times ↓ variability in pt transfer times Improved compliance Optimization of pt flow Adopting lean methodology= Improved processes	Standardized workflow= ↓variability ↓time, manpower & material waste ↑compliance Limits: Single organization study	Level 5B
Lilley et al. (2018)	In Pt PC effects on EOL outcomes Retrospective cohort	Hospital, trauma pts 294,665 Ø/6,097 rec'd PC >65 y/o	PC pt had shorter LOS, ↓ survival after d/c D/C to Hospice (on PC vs Ø PC) 69% vs 36.90% (p= <0.001)	In pt PC = ↑ hospice admission upon discharge Limits: Ø account for influential variables pt preference EOL & pt frailty ICD code misidentification	Level 3B

Mulville et al. (2018)	Evaluate and identify barriers at to timely hospice referral of pt near EOL Retrospective study	Data from Cancer Registry database at the Watson Clinic LLP Cancer and Research Center 369(161 hospice/208 non-hospice) oncology pts	Median LOS on Hospice 10 days 56% with LOS on hospice < 10 days= hospital death Gender p = .0755 Religion p= .1151 Insurance type p= .7855 Marital status p= .8478 Age p= .1749 Longer LOS on Hospice = ↑ QOL	Demographics = ∅ significant barrier to hospice care Shorter hospice LOS=↑ HC costs Hospice pt deaths occurred majority at home/ hospice center Limits: Single Center Pt preference in non-hospice group Unmeasured influential factors (comorbidities, treatment modality, PPS) 65% of pts > 70 y/o	Level 3B
Riggs et al. (2016)	Examined the timing, & predictors of hospice enrollment after PC Retrospective cohort study	study 1505 children and adults. 365 enrolled in Hospice after PC	Hospice enrollment after PC r/t sociodemographic and clinical factors PC prior to hospice lead to ↑Length of stay on Hospice	PC ↑ the LOC on hospice Limits: ∅ Influencing variables in data analysis Single organization Variability of PC provider services	Level 3B

Rosenblum et al. (2018)	Examined if oncology UC vs oncology UC + PC, effects metric outcomes Retrospective study	reviewed 200 randomly select charts	45% UC +PC died in hospice care vs 12% UC pts (<0.01) UC+ PC pts = better metrics= pain control, ↑ # advance directives completed & ↑ LOS on hospice	PC = ↑hospice LOS Limits: Single center well established PC service	Level 3B
Sanoff et al. (2017)	Hospice effects on acute hospital utilization at EOL in Liver Ca pts Observational study	Used claims data Total eligible 7992/5056 on hospice Medicare beneficiaries ≥ 65 y/o	Median LOS on hospice=17 days Hospice vs Ø hospice: =↓rates of hospitalization (7.9% v 47.8%; risk ratio [RR], 0.16; 95% CI, 0.14 to 0.19) =↓ICU stay (2.8% v 25.3%; RR, 0.11; 95% CI, 0.09 to 0.14), and =In-hospital death (3.5% v 58.4%; RR, 0.06; 95% CI, 0.05 to 0.07)	Hospice =↓ED visits, ↓hospitalizations, ↓ICU stays, & ↓LOS in-hospital. Limits: Unable to determine severity of ESLD & cancer=? life expectancy	Level 3B
Schneider et al. (2018)	Evaluate PC effects EOL outcomes in terminal GYN pts Retrospective study	Chart review 240 total/107 PC	Pts with PC were 2.55 times more likely to enroll in hospice vs without PC (p value = 0.016).	PC =↑hospice enrollment Limits: Single institution Data limited to documentation	Level 3B

Schwartz et al. (2020)	Standardize specimen label workflow implementation, 2-person check Quality Improvement	Pre=31 error vs Post=3 error rate	Pre- error rate 0.21 per week. Post-error rate ↓0.07 (68%↓)	Supports standardized workflow Limits: Single organization case study	Level 5B
Watcherman et al. (2018)	Examine effects of hospice utilization on EOL costs for ESRD pts Cross-sectional observational study	Renal Data System Repository = HD pt 770,191 On HD & Hospice at TOD= 154,186 18 to > 85 y/o @ TOD	Discontinued HD before death:13% non- hospice vs 66.3% Hospice pt Ø hospice vs < 3 days hospice LOS= ↑hospitalization (83.6% vs 74.4%; $P < .001$) & ↑ ICU admission (54.0% vs 51.0%; $P < .001$)	Hospice longer LOS (>15 days) = ↓HC costs Hospice shorter LOS (< 3 days) = ↑HC costs Hospice shorter LOS = to HC costs of non-hospice pt Limits: Data limited to ESRD on HD dual Medicare- Medicaid only Ø account for pt/family Tx preferences	Level 3B

Key: CA= Cancer. COD=Cause of Death. CI=Confidence Interval. d/c= Discontinue. EOL=End of Life. ESLD=End Stage Liver Disease. ESRD=Endstage Renal Disease. HC=Healthcare. HD= Hemodialysis. HR=Hazard Ratio. IQR (interquartile ratio). JHNEBPQLQG =John Hopkins Nursing Evidence-Based Practice Evidence Level Quality Guide. LS= Literature Support used. LOS=Length of Stay. MET= Metastize. Pt/pt= patient. QI=Quality Improvement. QOPI= Quality Oncology Practice Initiative. SNF = Skilled Nursing Facility. TOD=Time of Death. Tx= Treatment. UC= Usual Care. PC=Palliative Care. PPS-Palliative Performance Scale. vs= Versus. ↑=Increase. ↓=Decrease. &=And. Ø= no. +=Plus

Appendix D

Salisbury University IRB Approval Letter

Salisbury University
Institutional Review Board
Committee on Human Research
Phone: (410) 548-3549
Fax: (410) 677-0052
Email: humanresearch@salisbury.edu

IRB Research Protocol Approval Notification

Date: 4/21/21

To: M. DiBartolo
C. Boyd

RE: Protocol #36

Type of Submission: Exempt

Type of IRB Review: Exempt

Protocol is scheduled to begin 5/2021 end 5/2022

Approval for this project is valid from 4/21/2021 to 5/31/2022.

This letter serves to notify Dr. Mary DiBartolo and Charissa Boyd that the Salisbury University (SU) Institutional Review Board (IRB) approved the above referenced protocol entitled, Implementing a Standard Workflow Process to Increase the Palliative Care to Hospice Admission Rate on April 21, 2021.

Pursuant to Federal regulations 21 CFR 56.109, the IRB has determined that this protocol qualifies for Exempt review.

Federal regulation 45 CFR 46.103 (b)(4)(iii) requires Primary Investigators (PI), except when a subject is in immediate danger, to assure any change to an approved protocol is not initiated prior to IRB review and approval. Additionally, the PI must also inform the IRB of unanticipated problems involving risks to participants.

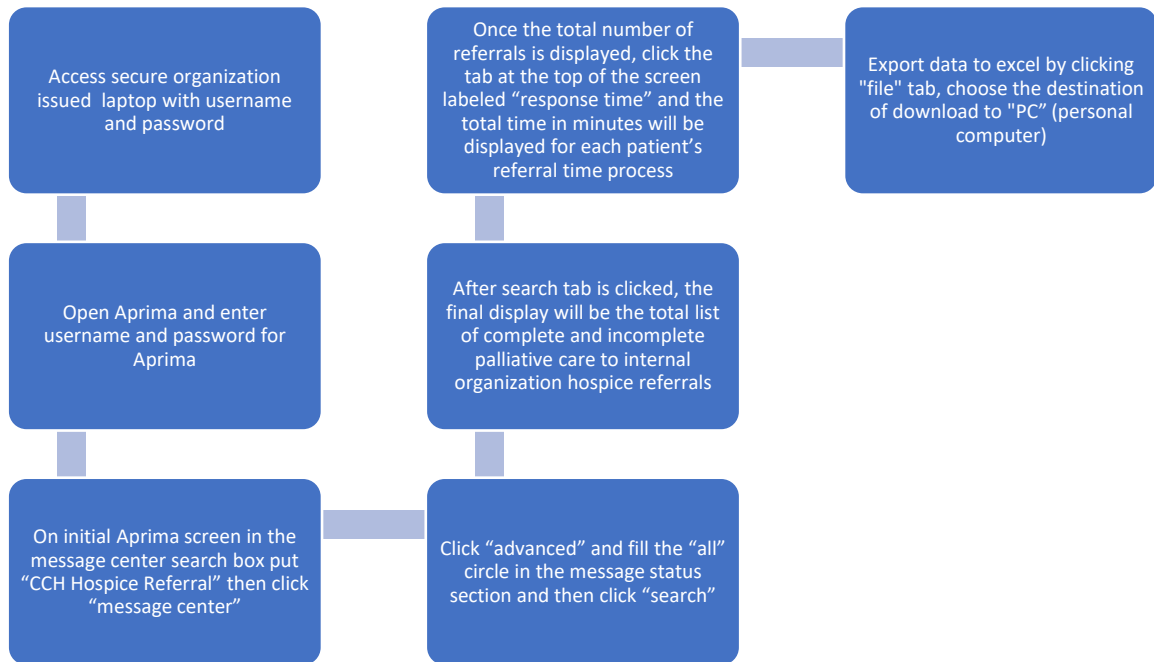
Your research is scheduled to begin 5/2021 and end 5/2022. It is the PI's responsibility to submit continuing review reports in a timely manner (at least 3 weeks prior to scheduled end date on the protocol approval).

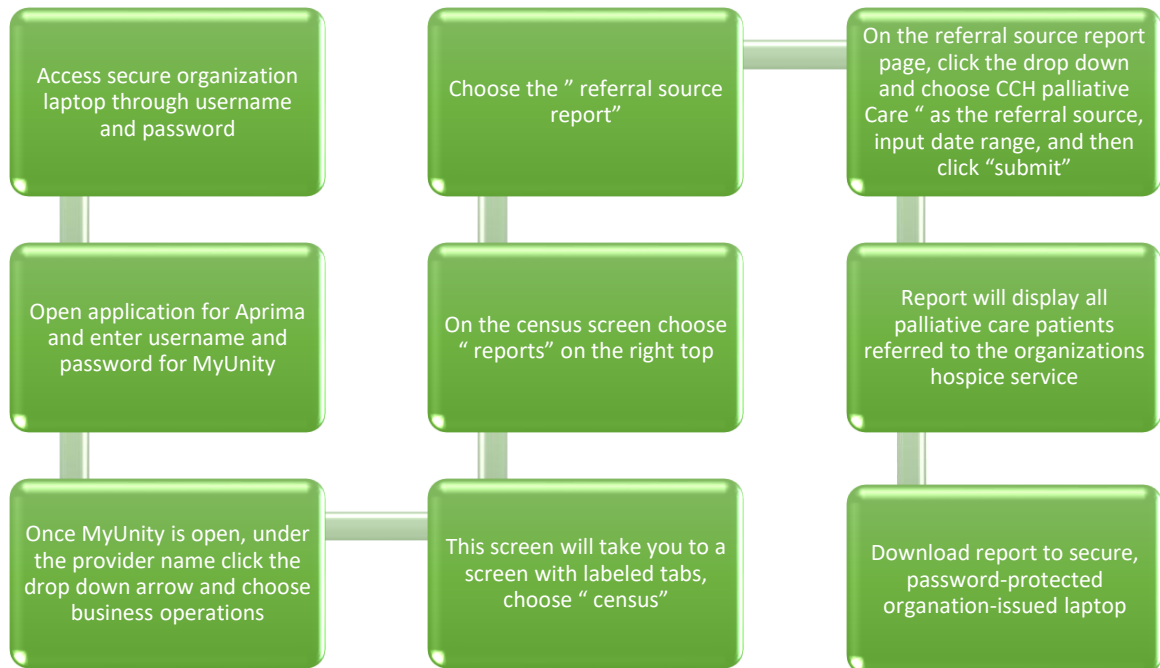
The SU IRB is organized and operated according to guidelines of the United States Office for Human Research Protections and the United States Code of Federal Regulations and under Federal Wide Assurance No. FWA00020237.

If you have any questions about this review or questions, concerns, and/or suggestions regarding this process, please do not hesitate to contact the Office of Graduate Studies and Research at 410-548-3549 or humanresearch@salisbury.edu.

Appendix E

Steps to Retrieve Aprima Data



Appendix F**Steps to Retrieve MyUnity Data**

Appendix G

February 2020 Organizational SWOT

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> • Well-established community and inpatient palliative care programs • Well established tri-state hospice program • Tri-state inpatient hospice unit • Well-funded and reimbursed non-profit hospice care service • Largest provider of hospice and palliative care services in the tri-state • Recent changes to executive-level leadership who demonstrate transformational leadership qualities 	<ul style="list-style-type: none"> • Low insurance reimbursement for palliative care services (no insurance verification system or customer payment agreement in place) • Solo provider representing the palliative care team • Non-standardized palliative care admission process • Non-standardized palliative care to hospice service transition process • Inability to track non-billable hospice and palliative care visits leading to inaccurate provider productivity calculations
OPPOURTUNTIES	THREATS
<ul style="list-style-type: none"> • Integrate insurance verification system into the EMR for palliative care services • Create customer payment responsibility form for unreimbursed palliative care services • Standardize palliative care admission process • Standardization palliative care to hospice transition process • Full team palliative care service • New hospice and palliative care EMR system 	<ul style="list-style-type: none"> • Financial loss from unreimbursed palliative care services • Competitor palliative care programs have an entire team that includes a social worker, nurse, and palliative medical provider • Dissatisfied patients and referral sources related to prolonged, incomplete palliative admission and palliative to hospice admission processes

TABLE 1*Characteristics by Group*

Characteristic	Pre n = 17*	%	Post n = 33*	%	Statistic/ Value	df	p
Age (mean ± SD)	71.7 ± 14.4		82.1 ± 9.5				0.008
Gender					0.89	1	0.765
Female	8	47.1	17	51.5			
Male	9	52.9	16	48.5			
Ethnicity					1.624		0.883
African American	2	11.8	3	9.1			
Asian American	2	11.8	2	6.1			
Caucasian	5	29.4	8	24.2			
Hispanic	1	5.9	2	6.1			
Other	7	41.2	18	54.5			
Hospice Admitting Dx					10.856		0.043
Cancer	8	57.1	9	29.0			
Cardiovascular	0	0	7	22.6			
Emphysema	2	14.3	1	3.2			
Dementia	2	14.3	11	35.5			
Kidney Failure	0	0	1	3.2			
Liver	0	0	1	3.2			
Neurological	2	14.3	1	3.2			

Note. Dx = Diagnosis. *Other* row in characteristics represents ethnicity that was not reported to the organization. Chi-Square test used to analyze gender. Fisher Exact test used to analyze ethnicity and hospice admitting Dx. N () * notes pre (14) and post group (31) for analysis on admitting hospice Dx.

TABLE 2*Outcomes by Group*

Outcome		Pre n = 17*	%	Post n = 33*	%	Statistic/ Value	df	p
Admitted to Hospice						1.674	1	0.321
	Yes	14	82.4	31	93.9			
	No	3	17.6	2	6.1			
Chart Closed						14.275	1	< 0.001
	Yes	4	23.5	26	78.8			
	No	13	76.5	7	21.2			

Note. Chi Square test used to analyze admitted to hospice and chart closed data. N ()* notes pre (14) and post group (31) for analysis on patients admitted to hospice.