Bridging the Gap: Achieving Excellence in Oncology Transitional Care

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Abstract

Transitional care (TC) is the provision of care coordination for at-risk populations aimed at improving continuity and overall patient outcomes. The purpose of the DNP project was to utilize the evidence-based Transitional Care Model (TCM) to facilitate care transitions by oncology nurse navigators and social workers. The project's goals were to increase transitional care visits provided to lung cancer patients by navigators and improve patient satisfaction for patients experiencing transitions in care. The model included identifying high-risk cancer patients using risk stratification tools and the delivery of timed interventions for following patients from their hospital stay to an outpatient setting. Primarily, the team was responsible for complex care coordination, including the identification of barriers that precluded patient success with treatment. By ensuring that care was coordinated effectively, patients were actively engaged in their care, resulting in improved patient satisfaction. Additional benefits included reducing hospital readmissions and improved team productivity. Future work includes incorporating the new process for the entire navigation team at the organization and examining the impact of the ongoing process on outcomes.

Keywords: Transitional Care Model, coordination of care, oncology care, high-risk populations, hospital readmissions

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Section I: Introduction

Background

Patient care is a systematic provision of services focused on the treatment and management of medical needs, as rendered by healthcare professionals (Agency for Healthcare Research and Quality [AHRQ], 2016). Care delivery includes inpatient and outpatient care as well as support services and care delivered in non-hospital and residential care settings (Naylor et al., 1994; Hirschman et al., 2015). A recent shift towards a more outpatient-centered approach has contributed to fewer hospitalizations overall, but those who are hospitalized are more medically complex (Advisory Board, 2020). During hospitalization, identification of post-acute care needs is essential to a well-coordinated discharge plan. Care transitions, such as the hospital to home, are a particularly vulnerable time because gaps in communication, responsibility, and accountability contribute to delayed access to care and increased hospital readmissions and adverse events (Prince et al., 2019).

Transitional care (TC) is a series of interventions aimed at improving outcomes for patients who are experiencing a change in care status such as the hospital to home (Naylor et al., 2004; Hirschman et al., 2015). Lack of communication, patient engagement, collaboration, limited monitoring, and discontinuity of care contribute to poor outcomes for patients undergoing a transition (Hirschman et al., 2015). Incorporating transitional care before and after discharge has been shown to meet patient needs, reduce hospital readmissions and adverse events, and increase patient satisfaction (Naylor et al., 2004; 2018). Furthermore, a multidisciplinary approach is key to the success of transitional care (Naylor et al., 2004; Hirschman et al., 2017).

Organizational Needs Statement

Oncology patients experience multiple disease and treatment-related factors that support the need for complex care management (Shank et al., 2017). An assessment of services at an academic medical center in eastern North Carolina demonstrated that transitional care nurses identify and provide interventions for high-risk patients experiencing a change in care. At the organization, oncology patients' care is coordinated by nurse navigators to prevent duplication of services from the transitional care nursing team. The nurse navigation model exists to provide support for patients throughout the entire care continuum from diagnosis to end of life (Schusted et al., 2019). While the navigation team has extensive clinical expertise in cancer-specific needs, they are not professionally trained in transitional care, leaving opportunities for gaps in care for patients undergoing key transitions.

The Agency for Healthcare Research and Quality (AHRQ) suggests that all patients, regardless of risk or diagnosis, receive transitional care services during and after hospitalization (AHRQ, 2016). An estimated 71% of patients with advanced-stage lung cancer are hospitalized one or more times during the first year after diagnosis (Hembree et al., 2019; Shank et al., 2017). A review of nurse navigation data at the organization revealed that only 8% of lung cancer patients receive dedicated navigation services before hospital discharge. Most hospitalized lung cancer patients are located on the inpatient medical oncology unit at the organization. A report on patient experience data specific to transitions of care demonstrated that there were lower patient satisfaction scores in this domain, when compared to academic peer groups (Appendix A).

Centers for Medicare and Medicaid's (CMS) Discharge Planning Conditions of Participation guidelines outline the requirement for a discharge process that includes transitional care and support the need for a collaborative effort between the interdisciplinary team and the patient/caregiver to achieve success (CMS, 2013; 2020a). Implementation of collaborative care models, such as transitional care, is governed by the CMS quality indicators including access to care, readmissions, and outcomes for patients with certain conditions, including cancer (CMS, 2009; 2020b).

Transitional care aligns with the Healthy People 2020 indicators by ensuring that those in need of care coordination receive access to health services (Office of Disease Prevention & Health Promotion, 2020). Analysis of the Quadruple Aim reveals that transitional care ensures interdisciplinary collaboration and handoff (clinical experience), mutual accountability of the clinical team and patient/family, driving education and engagement (patient experience), reduces readmissions and events of harm (cost reduction), and contributes to overall satisfaction and patient outcomes (Manchanda, 2016).

Problem Statement

The organization utilizes system-wide nurse-driven transitional care interventions for patients based on risk stratification. Nurse navigators coordinate care for oncology patients with disease-specific clinical expertise but lack training in transitional care. Delayed identification of high-risk oncology patients has contributed to suboptimal care transitions, missed opportunities in care coordination, and decreased patient satisfaction.

Purpose Statement

The purpose of this project is to implement an evidence-based Transitional Care Model (TCM) within the oncology setting for lung cancer patients. Applying the TCM will provide opportunities for early identification of patient needs and increase the navigator's clinical knowledge and interdisciplinary communication. The goals are to increase transitional care visits

provided to lung cancer patients by navigators, and to improve patient satisfaction for patients experiencing transitions in care, thereby improving overall outcomes.

Section II: Evidence

Literature Review

A comprehensive literature search was performed in July 2020 to identify sources focusing on transitional care in adult populations. PubMed was searched with the search strings as follows: transitional care AND oncology, transitional care AND discharge planning, and coordination of care AND oncology AND hospital discharge. The Cumulative Index to Nursing and Allied Health Literature (CINAHL) was searched with the search string of coordination of care in nursing OR transition of care AND discharge. For the four search strings, 1,006 total sources were located, and inclusion/exclusion criteria were applied for focus and clarification. Selection criteria included studies written in English, less than five years old, and studies as part of a peer-reviewed systematic review or meta-analysis with Melnyk & Fineout-Overholt's evidence level of IV or higher, leaving 22 identified studies. Articles were excluded if they focused on pediatric populations (3), utilized the term "transitional" as a pathologic staging term for urothelial cancer (1), were duplicates (4), were translated from their primary language in a confusing manner (2) or had a primary focus for psychosocial interventions (1). Three additional resources were provided for review by Dr. Mary Naylor's team at the University of Pennsylvania School of Nursing following personal communication. The final number of resources reviewed and retained was 14 (Appendix B).

Current State of Knowledge

Transitional care (TC) is a systematic provision of services for patients moving "across healthcare settings and between clinicians" (Hirschman et al., 2015, p. 2). TC serves as a bridge of care delivery for patients who are identified as high risk for readmissions, complications, or have a disease process with complex medical management (Kamermayer et al., 2017; Kooyman

& Witry, 2018; Shaw et al., 2018). High-risk patients are particularly vulnerable to complications during the 3-4 weeks after a hospitalization (Campagna et al., 2019). While patients await their first outpatient appointment, they lack direct oversight of a medical care team. Patients may be unaware of resources available to them, forcing them to misuse the emergency department for care. Leveraging this time in patient care to provide high-touch interventions is vital. Accurate identification of patients is imperative to developing targetable interventions focused on preventing adverse events, hospital readmissions, medication non-compliance and errors (Kamermayer et al., 2017; Vergara et al., 2018). There is no universal set of patient or organizational triggers to identify high-risk patients, but proactive selection with early intervention is the most successful approach to TC (Jayakody et al., 2016; Le Berre et al., 2017; McCay et al., 2019).

For patients and providers, the most accepted TC interventions include a bimodal component such as telephone follow up with face-to-face encounters and streamlined patient education, care coordination, multidisciplinary communication, and a timely follow-up process (Bryant-Lukosius et al., 2015; Vergara et al., 2018). Evidence suggests that a dedicated process and staff should be used for identification, follow up and tracking so that participants maintain a high level of personal accountability, trust, and responsibility (Jones et al., 2016; Roper et al., 2017). TC benefits a wide variety of patient populations but is the most successful when used in patients with chronic conditions, including diabetes, congestive heart failure, and chronic obstructive pulmonary disease (Le Berre et al., 2017; Toles et al., 2016). Minimal literature exists that describes oncology-specific TC programs or interventions.

Current Approaches to Solving Population Problem

Increasing identification of high-risk lung cancer patients by navigators and improving patient satisfaction is achievable through the delivery of TC. One option for TC is a process that includes a telephone-only intervention. A systematic review of nine studies suggested that this intervention decreased hospital readmissions and improved patient satisfaction (Vergara et al., 2018). For the telephone process, patients were identified and added to a caseload with a specific algorithm for follow up and follow through. Telephone visits include patient education, and discussion regarding medication management and warning signs for patients to report to their providers. There is no face-to-face interaction with the patient, and all communication occurs via phone. This method requires delegation of tasks as the coordinator is not physically visible to providers and others at times of necessary interventions.

Another option for the provision of TC services is a multi-modality process, including inperson visits. With this approach, a designated clinical professional is assigned to and visits patients face-to-face before a transition in care. This person is primarily responsible for the delivery and documentation of, and communication about any TC interventions (Kamermayer et al., 2017). In addition to the visit prior to care transition, the individual meets with patients on a timeline at specific touchpoints alone or in conjunction with a physician. A telephone process is commonly used in conjunction with face-to-face visits to create a seamless process for care transition that follows the patient throughout their care continuum (Vergara et al., 2018).

Considering the complexities of oncology care management at the organization, the option that delivers the best care is the multimodal process that includes face-to-face and telephone visits with a specific timeline for follow up (Kamermayer et al., 2017; Shank et al., 2017). Kamermayer et al. (2017) conducted a systematic review of 13 studies that included both

single (telephone only) and multiple (telephone plus additional) interventions. The studies that demonstrated the highest reduction in 30-day readmissions, mortality, and healthcare costs were those that delivered TC with multiple interventions. With the multimodal process, a dedicated individual is responsible for overseeing care coordination, including identifying patient needs and potential transitional care issues before hospital discharge (Kamermayer et al., 2017; Shaw et al., 2018). A review of eight randomized control trials (RCT) by Shaw et al. (2018) demonstrated that proactive identification of needs and interdisciplinary communication were the primary factors influencing the success of multimodal interventions.

The multimodal approach to TC was chosen because there were existing navigators at the organization that provided care coordination for oncology patients. This team's only significant barrier was that they were not trained in TC and did not follow a specific care coordination algorithm. Since the organization already had nurses who provide TC for many patient populations, training the oncology navigation team and incorporating this service within oncology was feasible. Developing a process that blends oncology clinical expertise with transitional care aimed to improve care delivery, satisfaction, and overall outcomes.

Evidence to Support the Intervention

One of the unique aspects of the oncology patient population is that there are many modalities for treatment, and complex care planning is essential to success. A compounding factor for oncology patients is that often, multiple pre-existing comorbidities exist, and are coupled with conditions caused by disease or treatment (Shank et al., 2017). A systematic review of ten RCTs suggested that TC be tailored based on population and disease-specific characteristics due to varied approaches and needs for care coordination (Jayakody et al., 2016).

A primary focus for TC for this population should include multidisciplinary care coordination and individualized care delivery.

Patient engagement, poor communication, and lack of trust are all considered modifiable aspects of care delivery (Naylor et al., 2018). An extensive systematic review of 92 RCTs examined the effectiveness of TC interventions for patients going from the hospital to home (Le Berre et al., 2017). Findings from this review further support the recommendation for the proactive identification of patient needs and a multimodal approach to TC. Utilizing a variety of well-coordinated approaches to TC delivery is proven to reduce hospital readmissions and improve care coordination. Having a dedicated nurse navigator who delivers TC interventions will allow for individualized care delivery and improve patient engagement and satisfaction. Capitalizing on existing organizational resources to train navigators in transitional care ensures that care delivery mirrors the existing model in practice and documentation. Utilizing an evidence-based approach to measuring transitional care outcomes through navigator volumes and patient satisfaction data will support future endeavors to deploy this model to all disease-site specific oncology navigators within the organization.

Evidence Based-Practice Framework

The project is guided by Dr. Mary Naylor's Transitional Care Model (TCM). The model was first conceptualized by Dr. Naylor and her team at the University of Pennsylvania to improve outcomes for high-risk elderly patients discharged from acute care settings (Naylor et al., 1994). In 2000, Dr. Naylor and colleagues described a decade of research and development of the TCM, outlining the impact that the model plays in healthcare quality, cost reduction, and patient satisfaction (Naylor et al., 2000). This model is superior to other transitions of care

models because it is considered highly adaptable and easy to integrate within existing organizational workflows (University of Pennsylvania School of Nursing, n.d.).

The basis for the model includes an advanced practice registered nurse (APRN) who leads a team-based approach to care coordination (Naylor et al., 1994, 2000). The APRN is trained in the use of the model, which includes face-to-face hospital visits before discharge, and a prescriptive process for follow-through (Naylor et al., 1994; Pauly et al., 2018). To promote continuity of care, the TCM includes a process where high-risk patients are screened and assigned to an APRN. The core components of the model center on the interventions from the APRN. Those include care planning, clinical education, assessment and management of symptoms, coordination of care, and collaboration with the multidisciplinary team (Naylor et al., 2000; Hirschman et al., 2017). While nurse navigators are not APRNs, they are specialty-certified and considered clinical experts within the multidisciplinary team (Schusted et al., 2019). Providing training in the use and benefit of the TCM ensures an understanding of identifying, following up, and disseminating transitional care needs and interventions (Naylor et al., 1994, 2000). At the organization, the concepts of Dr. Naylor's TCM model were supported, and the integration of the model into current workflows was highly achievable.

The project is also guided by utilizing the IOWA Model. This model highlights the importance of identifying and assimilating evidence-based practice (EBP) in any project or initiative (Cullen et al., 2018). The IOWA model includes detailed descriptions and a series of steps towards implementing EBP in practice. The first includes the identification of a trigger issue/opportunity, which occurs when "clinicians identify practice issues, challenges, or desired changes in outcome metrics" (Cullen et al., 2018, p. 2). The model uses the PICO (P = patient/problem/population, I = intervention, C = comparison, O = outcome) format to help the

project team accurately and concisely state their question or purpose. Using the IOWA model, teams are guided to ensure that their proposed problem or goal is prioritized in the organization or practice setting. The model suggests ways that project teams should be formed and identifies strategies to appraise and synthesize literature to ensure a strong enough body of evidence to suggest practice changes. Using the IOWA model provides teams additional approaches toward piloting, implementing, and evaluating the project and highlights the importance of "hardwiring" the evidence-based change into workflows to maintain and sustain the integrity of the new process.

Ethical Consideration & Protection of Human Subjects

This quality improvement initiative for lung cancer patients was an intervention aimed at improving coordination of care. Offering the intervention to any lung cancer patient who meets the risk criteria ensured equitable treatment. There was no perceived or actual threat of patient harm, as the proposed intervention aimed to improve care coordination and patient satisfaction.

Additionally, there were no concerns for members of the target population to be taken advantage of during the implementation. Any data collected was de-identified to follow HIPAA requirements and assure the protection of health information. Only one concern existed that the project intervention was only offered to lung cancer patients and not all cancer patients who meet risk criteria. The project occurred as a test of change with the plan to apply the intervention to patients with other types of cancer in the future. This plan helped allay any concerns related to the target population and assured the intervention's equitability and sustainability.

The organization's formal approval process included a meeting with the Senior

Administrator of the Center for Research and Grants to discuss the project, including plans for implementation and data dissemination. The completion of the Collaborative Institutional

Training Initiative (CITI) Modules within Group 1: All Biomedical Investigators and Key Personnel occurred before engaging with the Institutional Review Board (IRB). These modules assured that the project lead understood the implications for research and protection of human subjects.

The university required a self-certification Quality/IRB tool to be completed through Qualtrics, which outlined the purpose of the project and data collection methods, to determine if the project required further IRB review. Results from this Qualtrics tool indicated that the project was quality improvement in nature and no further review was required. The Principal Investigator Agreement for Internal Nurse Team Members was presented and signed by the project lead, the service line administrator, the Chief of Service, and the Senior Administrator for the Center for Research and Grants at the organization. The project lead and the organizational representative signed a data use agreement to ensure the protection of data and its use for future publications. This document outlined the method for data collection and dissemination.

In addition to the organizational requirements, several steps were also required by the college of nursing prior to project implementation. An implementation worksheet was completed by the project lead, identifying the types of assessment tools that would be utilized for data collection and evaluation of the project. Formal approval of the project design and implementation plan was approved by faculty advisors and the DNP program director.

Completing CITI modules and undergoing the formal process at the organization and the college of nursing assured transparency between all parties as the project neared implementation. The process was key to ensure that actions were completed in a streamlined and orderly manner to guide the project, while assuring safety and protection for all involved participants.

Section III. Project Design

Project Site and Population

This quality improvement project was implemented by oncology navigators working with lung cancer patients. The navigators were trained in specific transitional care (TC) interventions and documentation. The goal was to enhance navigators' services and increase patient satisfaction for patients experiencing transitions in care, thereby improving overall outcomes.

Description of the Setting

The project's primary intervention occurred in the inpatient medical oncology unit and ambulatory clinic. The oncology navigator team visited with patients and the multidisciplinary team before hospital discharge and at designated touch points to coordinate care. They followed the patient throughout the care trajectory. The process included in-person visits and phone calls, occurring from an office at the organization or virtually at the patient and care team's discretion.

Description of the Population

The oncology navigation team consisted of five oncology nurse navigators and two oncology social workers. The team had extensive clinical oncology experience and worked primarily in the outpatient clinic setting. The team all had bachelor's or master's degrees, and the majority were specialty certified in oncology nursing or social work, respectively. While oncology navigators did not work for a specific unit, they provided services to patients with a cancer diagnosis irrespective of their location within the organization. Their primary role was to identify barriers to care for patients with cancer and help overcome those barriers to receive well-coordinated care.

For the DNP project, the navigators who focused primarily on lung cancer were trained to identify patients in need of TC interventions. The training included strategies to identify and intervene on patients in need of TC. Their role consisted of education, communication, coordination of care, and electronic medical record documentation. Visits occurred before and after hospital discharge, either in-person or virtually, to provide TC interventions in an organized manner.

Project Team

For the project, the DNP student served as the project lead who was responsible for project leadership and direction. The project lead coordinated and provided education for the oncology navigation team, including information on process flow, required interventions, and the project's method and timelines. The oncology navigation team was also part of the project team, and their qualifications are described in the population section. The project lead engaged in a collaborative relationship with the site champion, an executive within the organization specializing in care transformation, transitional care, and population health. Through formal and

informal meetings, the project lead and site champion collaborated to develop a plan for implementing the DNP project.

The site champion and the project lead's organizational reporting structure were both service-line focused, reporting through population health. The service line administrator for Cancer Services also served as project mentor. This individual had extensive clinical and programmatic oncology experience and is responsible for developing cancer-based initiatives related to community outreach, including the development of the oncology navigation program. The project lead, the service line administrator, and the site champion were professionally trained as Clinical Nurse Specialists (CNS), although not serving in formal CNS roles. This common thread supported this quality improvement project through patient, nursing, and systems spheres and provided a robust support structure for the project's overall growth and sustainability.

Additional team members both directly and indirectly supported the project team. Faculty members at the College of Nursing provided extensive guidance on the project design, implementation, and evaluation. Specifically, the project faculty advisor had a background in research at the same organization as the project site. This experience provided an additional layer of professionalism and understanding of organizational approval processes. The medical director for hematology and oncology and the inpatient medical oncology unit's administrative team both endorsed the project and its plan to improve care coordination for patients with cancer. The nursing administrator for care management supported the role of the social workers in this project.

Project Goals and Outcome Measures

The project goals were to increase navigators' services through transitional care provided to lung cancer patients, and to increase patient satisfaction, thereby improving overall outcomes. Using the IOWA Model, the project was assessed throughout the implementation as needed to ensure that it was meeting planned project outcomes. Data were analyzed and summarized at the project's culmination as it related to stated project goals. Process measures for the project included the number of nurse navigator referrals that were received throughout implementation and the number of TC interventions completed. Outcome measures included patient satisfaction related to transitions of care and hospital readmissions for patients receiving TC services.

Description of the Methods and Measurement

Process measures were reviewed to ensure that the provision of TC interventions occurred as planned. The number of nurse navigation encounters were reviewed monthly. This data was provided from an automated report generated from the electronic medical record by Informational Services (IS) and delivered to the project lead. Data extracted from this report included the date(s) and type of encounters (coordination of care, patient education). As the form was already in existence and did not have a discrete "transitional care" visit type, reviewing trends in the type of visit was utilized to demonstrate service utilization. An additional process outcome was measured by reviewing the number of transitional care interventions completed and documented before discharge, within 24-48 hours post-discharge, seven days post-discharge, and 14 days post-discharge.

Assessment of outcome measures assured that stated goals were achievable by using the TC interventions delivered by oncology navigators. Lung cancer patients who were followed by navigators were assessed to identify the percentage of hospital readmissions that occurred during

the intervention period and up to 30 days post-intervention. Additionally, patient satisfaction related to transitional care was reviewed monthly to assess whether the project was in line with stated outcomes.

Discussion of the Data Collection Process

Data for the project were collected in several ways. Data demonstrating the number of nurse navigation encounters were retrieved from a monthly electronic health record report. This report was already automatically sent to the project lead monthly as part of current job responsibilities at the organization. The information was typically used for reporting quality measures for the navigation team within the organization, but the specific elements needed for the DNP project were easily extracted. This report also contained information on the TC encounters' timing to determine when the interventions occurred (pre- and post-discharge).

Lung cancer patients were identified by reviewing the daily census for the inpatient medical oncology unit at the organization. Chart reviews were completed by the project lead and the project team to identify patients who met criteria for TC, and to determine if any unplanned hospitalizations occurred during the project. The Director of Professional Practice and the Director of Experience Analytics at the organization provided a report from Press Ganey on the three transitional care questions for the inpatient medical oncology unit to review patient experience monthly (Appendix C).

Each patient was assigned a unique code that provided numerical identification for tracking throughout the project implementation. A code sheet was created that included the patient's name, date of birth, and the unique codes, specifically for tracking purposes. The code sheet was only accessible to the project lead for conducting chart reviews on the patients to identify the timeliness of interventions and assess for readmissions throughout the

implementation phase. All data were entered onto an Excel spreadsheet for tracking of interventions and data analysis. No identifying information was recorded, only the unique code. The code sheet containing patient information was stored in a locked office in a locked drawer only accessible by the project lead. This sheet was destroyed in a HIPAA compliant shredder at the end of the project, according to the organizational policy. All project data were stored within a secure, password-protected Pirate drive that was only accessible by the project lead.

Implementation Plan

After all requirements were met with the organization and the university, project implementation began. The first step included educating the project team. This two-hour education session provided an evidence-based history of transitional care as a framework and a background for TC as it aligned with the organization and cancer service line. The organizational policy for the provision of transitional care was reviewed with the team. The project lead and the team reviewed how to identify patients in need of TC, utilize the specific algorithm for interventions (Appendix D), and document those interventions in the medical record. At the culmination of training, the team verbalized understanding of the concepts of transitional care for oncology patients and was able to identify the rationale for providing these services. The project timeline was shared with the project team, including the identification of an implementation start date.

The specific implementation process occurred over 12 weeks. During this period, the team completed a daily chart review of inpatients on the medical oncology unit to identify patients in need of TC. All patients were assessed utilizing the Inpatient Readmission Risk Score Tool (IPRS). The IPRS is a generic risk-stratification tool embedded within the electronic medical record that stratified and assigned patients a risk score based on a combination of factors

of hospitalizations, comorbidities, and social determinants of health. This tool was slightly modified to capture the needs of lung cancer patients (Appendix E). Using the tool, all patients who scored three or greater received TC services. As the navigation team was not available on the weekend, they did not complete a review of the patient list on Saturdays or Sundays. However, the team was still responsible for reviewing any patients who were admitted over the weekend when they returned. The team was also responsible for communicating any barriers to success of implementing the interventions during weekly meetings with the project lead.

During the implementation period, data were collected and recorded on an Excel spreadsheet (Appendix F). TC interventions occurred at specific intervals within the patient's care. The navigator met with the patient while hospitalized to identify any barriers to care at or before hospital discharge. They followed the patient throughout the hospitalization and were responsible for communicating actual or potential needs with the multidisciplinary team to ensure proper handoff and coordination. Prior to hospital discharge, the navigator provided his/her contact information and communicated the plan for TC services to the patient/caregiver and the team. A follow-up TC encounter occurred 24-48 hours post-hospital discharge.

Additional "visits" occurred within seven days and 14 days post-discharge, at a minimum. All visits occurred via phone, face-to-face, or by utilizing a virtual platform, depending on patient preference and location at the time of need.

Navigators followed the Oncology Transitional Care Algorithm to complete patient encounters (Appendix D). Within the algorithm, the SMART transition format was utilized to communicate with patients. This format included a review of "S-signs and symptoms to report, M-medication reconciliation and review, ensuring provider follow up A-appointment was established, reviewing any relevant R-results, and having the patient T-teach-back the

information reviewed" (, 2019). Encounters were documented within an existing navigator intervention form in the electronic health record (Appendix G). As there was no discrete "transitional care" visit type, navigators were instructed to document transitional care visits by selecting "coordination of care" and "knowledge deficit" as the encounter reason. An assessment of potential needs or barriers to care was also completed during the visit, and appropriate referrals to additional services were made accordingly. Ongoing follow up occurred for the patient through a minimum of 14 days. Patients were followed through the TC process regardless of support that they received from other organizational programs or processes (e.g., home health, telehealth monitoring).

During the implementation period, the project lead conducted weekly meetings with the project team to identify any barriers to success and ensure completion of interventions. The project lead created a weekly run chart to track trends in the utilization of TC services. Every two weeks, the project lead reviewed the run chart and any information from team meetings to assess for project flow and trends in the utilization of TC services. The project lead met with the site champion every two weeks to review the implementation plan, facilitators and barriers to success, and project data. Every month, the automated report containing navigation data was sent to the project lead and reviewed to examine navigation encounters. The project lead communicated with the Director of Professional Practice or the Director of Patient Experience Analytics monthly to obtain the patient experience data. Both reports were reviewed to evaluate the project outcomes. At the culmination of the project, all data were finalized, collected, and summarized.

Timeline

During the summer semester of 2020, the process for the DNP project started. During this time, the project's key components were identified, including the problem, dedicated site champion, the project team, and goals. An extensive literature search was conducted to determine a framework and relevant evidence-based resources. The examination highlighted the need for TC interventions for patients across care settings that were applicable within oncology. The IOWA Model and Dr. Mary Naylor's Transitional Care Model were chosen as frameworks to guide the project.

The fall semester of 2020 included completing project design and implementation plan, including the project team's timeline and responsibilities. Multiple requirements were met for both the organization and the university to ensure participants' protection and mutual transparency of the project plans, goals, and data usage. An organizational letter of support was provided.

The spring semester of 2021 primarily consisted of the implementation of the project for 12 weeks. This semester included education of the project team about the implementation plan. The process was guided by the IOWA Model and tracked using a run chart in planned two-week increments. Assessment of data occurred monthly to assess trends in the intervention and for patient satisfaction. At the end of the implementation period, the data were collected and summarized. See Appendix H for a visual representation of the project timeline.

Section IV. Results and Findings

Results

The purpose of the project was to implement an evidence-based transitional care model within the oncology setting for lung cancer patients. In order to assess for planned outcomes related to improving navigator encounters and improving patient satisfaction, data were reviewed prior to, monthly during project implementation, and after project completion. Reviewing the monthly navigation report identified trends in nurse navigation encounters provided to lung cancer patients. The report generated from Information Services (IS) to the project lead did not have a discrete data element for transitional care visit type. Instead, the project lead reviewed the encounter types "coordination of care" (COC-V) and "patient education" (PE-V) to evaluate the utilization of navigator services. The total number of encounters included all patients followed by the navigator throughout the month, not just those who were followed for the project. It should be noted that encounters could include either COC-V or PE-V, or both types.

In the month prior to project implementation, there were 103 total encounters with 68 (66 %) COC-V and 76 (74%) PE-V visits. After one month of implementation, the total encounters for the month were 131 with 104 (79 %) COC-V and 101 (77%) PE-V visits. After the second month of implementation, there were 153 total encounters with 111 (73%) visits for COC-V and 128 (84%) for PE-V. At the end of project implementation after the third month, there were 142 total encounters with 126 (89%) COC-V and 132 (93%) PE-V. See Appendix I for a visual representation of the encounter data.

Prior to project implementation, there was no standardized process for transitional care for oncology patients. Referrals were solely driven by prompt and accurate recognition of patient needs by the multidisciplinary team. As guided by the DNP project, the navigation team

conducted daily chart reviews to assess for patients who were eligible for services during the implementation phase, demonstrating a proactive approach to identification of at-risk patients. These data were tracked in a weekly run chart (Appendix J).

Overall, 62 lung cancer patients were identified for and provided Transitional Care (TC) services during the implementation period. Of those patients, 97% (60) received their first encounter before hospital discharge. All 100% (62) of those patients received either in-person or telephone follow-up within the appropriate time frame of 24-48 hours, seven days, and 14 days post-hospital discharge. Of these patients, there were six (9.6%) hospital readmissions. A root cause analysis of these readmissions revealed that the readmission reasons were deemed non-preventable by navigator services. Reasons for readmission were related to symptoms from progression of disease (4 patients) and from COVID-19 infection (2 patients). This data was not previously measured for the unit, so no direct comparison was available for pre and post-implementation.

The project lead reviewed patient experience data related to three transitional care questions monthly to assess for trends in patient satisfaction. Compared with the Academic Peer Group Mean (APGM), the inpatient medical oncology unit was underperforming the benchmark in two out of three questions prior to project implementation (Appendix A). For the first question (understanding of health management), the APGM benchmark was 53.85 with a pre-implementation score of 48.98. Scores after one month, two months, and three months of implementation were 71.4, 100, and 83.3, respectively. For the second question (medication clarity), the APGM benchmark was 61.47, with a pre-implementation score of 63.64. Those scores were 83.3, 80, and 60 for the three months of implementation. For the third question (consideration of preferences), the APGM benchmark was 46.99 with a pre-implementation

score of 43.75. After beginning implementation, the scores were 71.4, 100, and 83.4 for months one through three, respectively.

During months one and two of project implementation, the unit outperformed the benchmark in all three questions. During month three, the unit outperformed the benchmark in 2 out of 3 questions (Appendix A). After discussing key findings with the Director of Experience Analytics at the organization, interpretation of the results in month-by-month increments was reviewed with caution as the *n* number was small. Throughout the entire implementation period, there were only 18 completed patient experience surveys. When analyzing data, the organization preferred to review data with an *n* number of at least 30 to increase reporting accuracy.

Discussion of Major Findings

Transitional care (TC) is an evidence-based intervention for patients who are transitioning from and between health care delivery settings. Complex care coordination for lung cancer patients is essential due to disease, treatment, and healthcare system complexities (Kamermayer et al., 2017; Schusted et al., 2019). The initial literature search highlighted that patients who received multimodal (face-to-face and telephone) TC visits demonstrated the most success in preventing 30-day readmissions (Kamermayer et al., 2017; Shank et al., 2017). This was mirrored throughout the project implementation, as only 6 out of 62 (9.6%) patients were readmitted. The literature also suggested that patients who received TC were likely to be more engaged and compliant with their treatment and experience fewer interruptions in care (Naylor et al., 2018). While compliance with treatment was not measured during the project, the navigation team reported that multiple patients shared gratitude for appointment reminders and consistent education about their medication or plan of care. This suggested that providing this information helped motivate them to continue the treatment plan as prescribed.

Reviewing the data revealed several themes. One of the most critical findings from the project was that a standardized process was adaptable and well-adopted within the oncology population. Educating a team of navigators to adopt this process was seamless as their primary work paralleled that of the TC team. The navigators were highly engaged in identifying patients and following through with encounters as planned, highlighting the importance of a dedicated and motivated team in project success. The project implementation proved successful in keeping oncology patients out of the hospital. Only 6 out of 62 (9.6%) were readmitted, with none preventable by navigator services.

The project demonstrated that this streamlined approach was an effective way to improve the navigation team's productivity as measured by encounters. The data demonstrated growth in both overall encounters provided to lung cancer patients and growth in the percentages of visit types that included coordination of care and patient education. The growth in the navigation encounters revealed that there might have been patients who were not previously followed by navigation services and thus not receiving TC. Findings from the project demonstrated that it was essential to develop a standardized process to identify and follow at-risk populations to support the organizational mission and provide access to care.

Patient satisfaction with their care was identified in the literature as a key indicator for health (Hirschman et al., 2015). Patient satisfaction is a broad topic influenced by many different factors. Patients who have well-coordinated care and appropriate education about their diagnosis and plan of care show increased participation and overall satisfaction. The project data revealed improvements in overall satisfaction for the TC questions in the Press Ganey database.

Therefore, the efforts from the DNP project should be considered a potential factor in impacting the positive trends towards outperforming the benchmark in patient satisfaction.

Section V. Interpretation and Implications

Cost/Benefit

In reviewing the overall cost of the project, several aspects were considered. The estimated cost included project development and implementation hours, team meetings, and all labor associated with manual identification of patients and performing the transitional care (TC) encounters. All project costs were considered predominantly labor-only. The only non-labor costs were related to the educational session for the navigation team and included printing materials and writing utensils. Utilizing estimation, the cost of the project was calculated to be approximately \$12,000. See Appendix K for specific values related to the project budget.

One of the outcome measures of the project included the measurement for the prevention of hospital readmissions. An estimated cost per episode for a hospitalized cancer patient ranges from \$1,700 to as high as \$20,000 (Montero et al., 2016). For patients receiving TC navigation services, 56 lung cancer patients did not have 30-day readmission. Utilizing the cost estimation from Montero et al. (2016) and Solomon et al. (2019), keeping this number of cancer patients out of the hospital equated to a potential cost-savings of anywhere from \$95,200 (56 x \$1,700) to 1.1 million (56 x \$20,000) during the implementation period. While training related to transitional care was completed for nine navigation team members, the project's implementation phase was specific to lung cancer. It utilized the services of just two of the nine navigation team members. At the organization, the navigation team specialized in caring for patients with other types of cancer. If this project were implemented on a larger scale, the potential for cost savings would be even more significant. The entire team of navigators could have easily identified 250 patients during a similar period. If all those patients were kept out of the hospital, the cost savings could top five million dollars in just twelve weeks.

A significant benefit of the project was that the project team could incorporate this work within their daily workflow without major disruptions. This prevented the need to recommend an additional full-time equivalent (FTE) for project sustainability. If carried out on a larger scale for the entire navigation team, the potential to trim project-related costs should be considered. For this project, additional cost savings could occur if there were an automated process for identifying patients for TC services. Removing the need for daily chart reviews by the navigation team would reduce the budgeted costs by over ten percent.

Implications of the Findings

Through a thorough review of the process and outcome measures of the project, the overall implications of implementing a project of this nature were realized. Careful consideration of the implications for patients, nurses, and the healthcare system was used to develop recommendations for future projects that aim to reach at-risk patients through transitional care. Understanding the "why" behind the project outcomes was essential for linking the project deliverables with outcomes to develop project sustainability and future success.

Implications for Patients

While reviewing the outcome measures related to patient satisfaction before, during, and after project implementation, there was a marked improvement in all three scores compared to academic peer groups. The evidence has shown that having well-coordinated care improves patient satisfaction and contributes to patient success with cancer treatment (Naylor et al., 2018; Shank et al., 2017). The transitional care process is essential for patients because they feel supported and are actively involved in decision-making. The inclusion of family and caregivers throughout the project only strengthened this idea. Furthermore, TC has been proven to reduce hospital readmissions and emergency room visits. Prevention of both has downstream effects for

both the patient as well as the healthcare system. Healthy People 2020 indicators suggested that all patients needing care coordination receive access to health services (Office of Disease Prevention & Health Promotion, 2020). The navigation team helped patients achieve this measure by ensuring access to and availability of these services as well as improved continuity of care overall.

Impact for Healthcare System

There were six 30-day readmissions for patients followed by oncology navigators throughout project implementation, which amounts to a readmission percentage of 9.6%. The root cause analysis (RCA) for these patients concluded that the readmissions were not preventable by navigator interventions (unavoidable complications from disease or treatment rather than lack of care coordination). The navigated patient's 30-day readmission rate of 9.6% was much lower than the national average of 27% for patients discharged from medical services with oncology diagnoses (Solomon, et al., 2019).

As hospitals seek reimbursement from the Centers for Medicare and Medicaid Services (CMS) for patients with oncology-related admissions, initiatives that decrease hospital readmissions are important to consider. Using oncology navigators to provide TC services to improve care coordination and reduce readmissions aligned with the Quadruple Aim related to cost reduction and improved patient experience. Furthermore, the project aligned with Medicare's Hospital Readmissions Reduction Program (HRRP), as transitional care services were instituted to combat patient and system barriers that keep patients returning to the hospital for costly readmissions (Massachusetts Medical Society, 2018). Currently, CMS penalties do not include those for oncology-related diagnoses (Bell et al., 2017). However, using similar themes within the HRRP for heart failure and pneumonia patient populations justified the benefit for

other at-risk populations such as oncology. In addition, ensuring that appropriate coordination of care is available for at-risk patients can help them remain out of the hospital, which translates into decreased healthcare costs and overall better patient outcomes.

Implications for Nursing Practice

As most of the oncology navigation team consisted of nurses, the implications for the nursing team were easily identified. Throughout the project implementation, during weekly meetings, the group expressed satisfaction with the new process. They felt that having an earlier awareness of patients in the hospital allowed them to identify barriers to care much sooner than their standard process. Additionally, this process allowed the nurse navigators to be more confident in assessing patients and speaking more openly with the multidisciplinary care team, which supported interprofessional communication and autonomy. Furthermore, the nursing staff on the units shared with the project lead that coordination of care for the lung cancer patients was much more efficient when the TC process was followed.

For advanced practice registered nurses (APRNs), this type of project had multiple implications. One of those is the value that the role brings to interprofessional teams. While the navigation team were not APRNs, they were highly skilled and credentialed individuals who were guided by a project lead who was an APRN. This demonstrated a solid example of interprofessional collaboration, as the navigation team was considered experts in their work. The navigators were involved in not only educating the patient, but the multidisciplinary team as well. The project demonstrated the value of nursing teams in identifying and improving care delivery for patients. The financial implications realized from the project directly resulted from work by nurses, demonstrating the value of leadership by an APRN. This highlighted the

importance of incorporating evidence-based practice into sustainable work to support the organization's financial stability.

Sustainability

While the project solely focused on lung cancer patients, many oncology patients were already followed for care by oncology navigators at the organization. Throughout the planning and implementation of the project, these navigators were interested in the workflow and process adopted by the lung cancer team. In addition, they indicated they were interested in incorporating a similar strategy within their respective multidisciplinary teams. As the project work only marginally shifted the navigator workflow and did not require additional full-time equivalent (FTE) support, the work is considered feasible within the organization. The first steps to hardwiring this change into existing practice include disseminating results to oncology peers and developing a sustainability plan amongst the navigation team. One key component to consider was the importance of continually engaging stakeholders at the organization.

As lung cancer was one of the most common cancer types in the region that the organization served, supporting this at-risk population with transitional care was easily justified. Furthermore, the work supported the organizational mission statement of "improving the health and wellbeing" of at-risk populations (\$\sum_{\text{None}}\sum_{\text{None}}\sum_{\text{none}}\sum_

One challenge to fully implementing this work across the navigation team was that identifying patients who need TC services was a manual process. Collaboration with information systems (IS) partners to work towards a streamlined process within the electronic health record (EHR) was integral to project sustainability. Incorporating this within the EHR will allow for easier identification of patients and decrease time spent doing so. This will free up the team to conduct more interventions on identified patients instead of performing the cumbersome process of searching for patients in the EHR. Overall, this will improve productivity of the navigator team, allowing them more opportunity to serve additional patients or participate in quality improvement initiatives.

Dissemination Plan

The project will be disseminated through the university's ScholarShip repository and through an oral presentation at the College of Nursing in July 2021. At the project site, the project lead will present the outcomes and key findings from the project at one of the lunch-and-learn events hosted by the Center for Research and Grants. The date for this is to be determined. Additionally, the project lead will present the project to the Cancer Committee at the organization and the entire oncology navigation team. Presenting this work to the oncology team is a key step in disseminating findings and developing future plans towards sustainability. The project lead will also share this work with the local Oncology Nursing Society (ONS) chapter during a presentation at one of the monthly meetings. Members of this chapter include oncology nursing professionals throughout eastern North Carolina. Additionally, the project lead submitted an abstract to the Academy of Oncology and Patient Navigators (AONN) for a poster presentation during their annual meeting planned for November 2021. One of the topics for abstracts is care transitions/care coordination, which will be a good fit for this work.

Section VI. Conclusion

Limitations and Facilitators

During the project, the project team encountered few limitations overall. Fortunately for this project, the leadership and the teams were supportive and engaged in the project steps to help keep things running as planned. One limitation was the manual process required to identify patients for transitional care (TC) services. This process required much longer to identify patients in need of services. Multiple meetings occurred with Information Services (IS) throughout the project to maximize the functionality of services within the electronic health record. Due to that department's competing priorities set by COVID-19-related projects, there was minimal progress in developing an automated process to identify patients.

An additional challenge was that most of all project meetings were virtual due to limitations from COVID-19. While the groups were all flexible and understanding, technological glitches sometimes hindered productivity. The project team worked to resolve issues during the scheduled meeting time. The inability to meet in person had its challenges as the team felt that discussions about the patients and process would be more effective if conducted face to face. This barrier did not hinder the ability of the team to provide care for patients, however.

Throughout the implementation phase, some work at the organization shifted to remote, offsite work. Despite this organizational change, the navigation team was able to work in-person onsite for the majority of the time, allowing the project implementation phase to continue as planned. During the few times the team was working remotely, they could complete patient calls and encounters via telephone or video communication. This ensured seamless access to and provision of coordination of care.

Another limitation was that the project had a few breaks in the activity created by the university and holiday timelines which were completely unavoidable. These breaks threatened

the momentum of the project but the project team ensured that the process moved forward. There was ongoing reeducation of the project team, stakeholders, and multidisciplinary team to ensure that everyone was abreast of the project status and any changes to the process throughout.

A primary facilitator of the work included the vast amount of support for the initiative from multiple stakeholders within the organization. One positive aspect was that there was already an existing transitional care model in place at the organization. Having a model in place provided an evidence-based starting point to kickstart the initiative. Another primary facilitator to the project initiative was a transition of the nurse navigation team and the project lead's reporting structure within the organization in December 2020. During the transition, it was identified that the work from the project would be an excellent fit with the new department as initiatives and deliverables were similar. This work also directly aligned with the organizational goals and mission to improve patients' health and well-being. This collaborative opportunity only strengthened the foundation and plans for the project and its future sustainability. Another facilitator to the project was that the project lead, mentor, and site champion were trained as Clinical Nurse Specialists. Having a similar background and experience was a unique opportunity to match expertise and passion for evidence-based change within the organization.

Recommendations for Others

If considering replicating this quality improvement project, it would be important to conduct an organizational assessment to assess for existing resources. Additionally, it would be key to engage key stakeholders such as divisional or service line and organizational leadership in the early phases of project development. Before project planning, it would be important to identify the target population and a physician champion who would support the work. If choosing to replicate this work within the oncology setting, identifying specific high-risk criteria

that related to the unique population that the organization served will be important. For example, if the project site is more urban, there might be less concern for distance for care as a potential barrier. It would be key for project stakeholders to understand how those criteria were related to the organizational mission and any potential implications for cost savings or reduction.

In this project, there was an exceptional opportunity to link two evidence-based programs: transitional care and oncology navigation. Without the grassroots efforts of both programs, it might be more challenging to start from a completely blank slate. If navigators or a transitional program do not exist at the location of consideration, it would be imperative to identify a specific transitional care model such as Dr. Mary Naylor's Model. Project leaders would need to identify a particular team that could consistently perform these interventions within the model's framework. With the existing concern around this project's manual process for identifying patients, it was essential to have clinical professionals with expertise in oncology who were reviewing the charts. Without someone with this specialized skill, a specific set of criteria would need to be adopted and followed for patient identification.

One recommendation would be to include information services (IS) as part of the project planning team because much of the project work included services made possible through utilization of the electronic health record. Including these team members from the start will minimize frustration, improve collaboration, and streamline the work. In addition, when exploring potential opportunities for documentation practices within a health record, IS understands the intricacies of the available technology and how to leverage their resources to maximize the impact for data reporting accuracy. A specific example of this would be to help develop and incorporate the oncology-specific risk-assessment tool that is automated in the electronic health record.

Recommendations for Further Study

This work within the lung cancer team generated interest throughout the project amongst other disease-site-specific navigators. As the cadence of the workflow for the other navigators is similar, it would be possible to adopt this process amongst the entire team. Throughout the literature, it was noted that coordination of care and TC was an effective strategy for improving patient experience and outcomes. While true, several populations were under-represented as TC has traditionally focused on patients with chronic illnesses such as chronic obstructive pulmonary disease (COPD) and congestive heart failure (CHF). Expanding this type of model to other specialties would support Centers for Medicare and Medicaid Services (CMS) regulations to provide transitional care to at-risk populations. This work is essential as organizations look to prevent hospital readmissions and review key performance indicators focused on delivering quality care for vulnerable patient populations.

Transitional care includes multiple evidence-based models, as noted throughout the literature. One area for future study might include evaluating different models to ensure that the selected model was the most effective for the population being served. For example, some models consider telephone-only encounter types, which would be interesting to explore as many indirect patient care roles have shifted to working remotely during the COVID-19 pandemic. While Dr. Naylor's model was effective for the lung cancer population and a good fit within the organizational workflow, consideration of other care delivery models may be valuable in determining the best fit at other organizations.

Final Thoughts

Transitional care is the provision of complex care coordination for at-risk populations in a systematic way. Evidence-based models such as Dr. Mary Naylor's Transitional Care Model

(TCM) are considered effective in providing this type of care within care delivery settings, including academic medical centers. While literature was limited related to the utility of this model for oncology patients, the model is considered highly adaptable for all populations. Utilizing specialized oncology navigators to deliver TC interventions to lung cancer patients within the oncology population is one way to improve patient satisfaction and streamline navigation services. Using a dedicated team that understands the population's unique needs ensures mutual support from the care team and the patient/caregiver. Developing a standardized approach is essential to reaching and following the most vulnerable patients throughout the care continuum. The project demonstrated positive trends in measurable outcomes related to team productivity, hospital readmissions, and patient satisfaction. Highlighting the prevention of hospital readmissions is one way to demonstrate that the service is fiscally responsible, and patient satisfaction impacts are equally important. Using the model to institute a similar process for other vulnerable patients (oncology or others) is one way that organizations can satisfy regulatory requirements, provide evidence-based care, and ensure the best outcomes for patients served.

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Appendix A

Patient Satisfaction - Care Transitions
(Inpatient Medical Oncology Unit at the Organization v. Academic Peer Groups)

Question	Academic Peer Group Mean	Inpatient Medical Oncology Unit (FY20,Q3)	Month 1	Month 2	Month 3
When I left the hospital, I had a good understanding of the things I was responsible for in managing my health.	53.85	48.98	71.4	100	83.3
When I left the hospital, I clearly understood the purpose for taking each of my medications.	61.47	63.64	83.3	80	60
During this hospital stay, staff took my preferences and those of my family or caregiver into account in deciding what my health care needs would be when I left.	46.99	43.75	71.4	100	83.4

Note: Patient experience data were extracted from the Press Ganey database

Appendix B

Literature Matrix

Authors	Year Pub	Article Title	Theory	Journal	Purpose and take home message	Design/Analysis/Level of Evidence	IV DV or Themes concepts and categories	Instr. Used	Sample Size	Sample method	Subject Charac.	Comments/critique of the article/methods GAPS
Bryant-Lukosius, D., Carter, N., Reid, K., Donald, F., Martin- Misener, R., Kilpatrick, K., Harbman, P., Kaasalainen, S., Marshall, D.Charbonneau- Smith, R., DiCenso, A.	2015	The clinical effectiveness and cost-effectiveness of clinical nurse specialist-led hospital to home transitional care: a systematic review	n/a	Journal of Evaluation in Clinical Practice	To determine the clinical and cost-effectiveness of Clinical Nurse Specialist transitional care interventions	Level II 13 RCTs with CNS-led interventions,	nurse-driven interventions, care coordination, transitions of care	n/a	13 RCTs	10 databases	All 13 RCT studies included CNS -led interventions in transitional care	Limitations: It is not determined if these interventions are cost effective. Different organizational structures, including cost and benefits of the CNS position, and variability of cost of interventions made for patients needing transitional care make it challenging to determine cost-effectiveness. Synthesis: CNS-led interventions have the potential to reduce acute care utilization, readmissions and improve patient selfmanagement and satisfaction. Interventions that are most effective included nurse-led discharge planning, comprehensive, tailored patient education, and close home or tele-health follow up post discharge. No clear process is superior to demonstrate efficacy in transitional care.
Jayakody, A., Bryant, J., Carey, M., Hobden, B, Dodd, N., & Sanson-Fisher, R.	2016	Effectiveness of interventions utilizing telephone follow up in reducing hospital readmission within 30 days for individuals with chronic disease: a systematic review	n/a	BMC Health Services Research	To determine if Telephone Follow UP (TFU) as an individual intervention or in combination with other interventions is effective in reducing hospital readmissions for patients with diabetes, and cardiovascular disease	Systematic review of 10 RCTs and cohort studies	Telemedicine, coordination of care, care transitions, chronic disease	n/a	10 RCTs	Literature review and database search for Medline, Embase, and Cochrane Library		5 /10 studies identified TFU as effective in reducing 30 day readmissions. 2 of those had pre and post-hospital discharge interventions Limitations: Studies are limited in generalizability as they are performed at single site locations. Additionally, the studies were based on different disease sites, which have slightly different management aspects. Synthesis: TFU is just one aspect of care coordination that has been effective in reducing readmissions. Tailored approaches based on disease sites, including education and recommendations are largely effective, but more information is needed to ensure that TFU is effective as a primary intervention.
Jones, C., Hollis, R., Wahl, T., Oriel, B., Itani, K., Morris, M., & Hawn, M.	2016	Transitional care interventions and hospital readmissions in surgical populations: a systematic review	n/a	The American Journal of Surgery	To determine if transitional care interventions are effecting in reducing hospital readmissions	Level V	patient-centered care, care coordination, transitions of care	n/a	10 RCT and cohort studies	Literature review and database search for PubMed dates of 1995-2015, English language, adult population	Studies reviewed identified transitional care interventions of follow-up phone calls, patient education, coordinated discharge planning, home visit, MD follow up	Limitations: Only 3/10 studies were RCTs. One study was a pilot study. Studies had lack of consistency Usefulness: The review of articles surrounding transitional care interventions suggests that coordinated discharge planning, education and patient follow up are important aspects of transitional care. Synthesis: Interventions in care coordination are best delivered by designated individuals who work as a multidisciplinary team member. Individualized patient education is essential to success of patients at discharge. Early interventions followed through discharge to home are the most successful type. More qualitative data is needed to support transitional care interventions as primary interventions responsible for reducing readmissions and events of harm.

ONCOLOGY TRANSITIONAL CARE

Hirschman, K., Shaid, E., Bixby, B., Badolato, D., Barg, R., Byrnes, M., Byrnes, R., Streletz, D., Stretton, J., & Naylor, M.	2017	Transitional care in the patient- centered medical home: Lessons in adaptation	n/a	Journal for Healthcare Quality	To describe the differences of the TCM and the patient-centered medical home (PCMH)	level V		survey	5 PCMH sites	survey and training for TCM and PCMH	community or academic health care affiliation in Southeastern Pennsylvania; a wide range of patients were served at each site.	This article describes the TCM and the PCMH and how they provide a collaborative environment for exceptional patient care.
Hirschman, K., Shaid, E., McCauley, K., Pauly, M., Naylor, M.	2015	Continuity of care: The Transitional Care Model	n/a	The Online Journal of Issues in Nursing	To provide a summary of the evidence base for the TCM and the model's 9 core components.	Level V	TCM Core components	Literature search	n/a	literature search	n/a	This article describes the evidence-based implications of the TCM including the core components of the model. Usefulness: reviewing the core components of the TCM and comparing with the plan for project implementation will ensure that the intervention is following evidence-based practice Synthesis: The 9 components are: Screening for high-risk patients, staffing, maintaining relationships, engaging patients and caregivers, assessing/risks and symptoms, education, collaborating, promoting continuity, and fostering coordination
Kamermayer, A., Leasure, A, & Anderson, L.	2017	The effectiveness of transitions-of-care interventions in reducing hospital readmissions and mortality	n/a	Dimensions of Critical Care Nursing	To determine the effectiveness of transitional care interventions on reducing 30-day readmissions, reducing emergency room visits, and mortality.	Level II 4 RCTS,	care transitions, care coordination	n/a	13 studies	CINAHL, EMBASE, Cochrane, and Ovid MEDLINE databases were searched to identify studies.	All studies included single or multiple TC interventions.	Interventions aimed at patients at high risk for readmission benefit from TC the most. Developing a process to identify those patients and provide direct intervention is key. Limitations: Inability to eliminate unavoidable readmission criteria from the studies limits discussion about TC as an overly effective method for improving outcomes. Synthesis: Standardization of TC interventions are the most important aspects of care. When delivered consistently, and as a multi-prong approach including provider and patient engagement, TC interventions reduce 30 day readmission rates, mortality, and healthcare costs
Kooyman, D., & Witry, M.	2018	The developing role of community pharmacists in facilitating care transitions: A systematic review	Coleman Care Transitions Intervention	Journal of the American Pharmacists Association	To explore the role of the community pharmacist in care transitions.	Level I-III Systematic review of 6 RCTs and non- randomized CTs	pharmacy-driven interventions, medication compliance, transitions of care	n/a	12 studies	PubMed, Cochrane, CINAHL, and Embase were searched to identify studies	12 total studies	Limitations: Not much literature exists about community pharmacists' roles in care transitions, but more about those in hospital or clinic settings. The topics of medication self-management, follow-up, red flags, and patient-centered record are the hallmarks of the CTI model, but only one of the studies identified cited use of this specific model. Over 45 types of pharmacy-driven interventions were mentioned in the 6 studies, leaving the inability to discern which one is most effective in care transitions. Synthesis: Although the studies do not mention a specific framework, interventions can be classified using the CTI model. Since the studies lacked consistent use of the model, it is difficult to identify best-practice interventions. Of the interventions, patient education and close follow up are considered the most effective in reducing adverse medication events and improving patient satisfaction.

Le Berre, M., Maimon, G., Sourial, N., Gueriton, M., & Vedel, I.	2017	Impact of transitional care services for chronically ill older patients: A systematic review	n/a	Journal of the American Geriatric Society	To determine the effectiveness of transitional care interventions for patients going from the hospital to home, specifically the primary care specialty	Level I Systematic review of 93 RCTs	chronic illness, transitional care, geriatric nursing	n/a	92 RCTs	Medline, CINAHL, PsychiNfo, EMBASE databases were utilized to identify 92 studies about transitional care	66% of the groups had a dx of CHF, and the average time that interventions begun was 7.9 days after discharge, lasted 179.7 days with a mean of 7.1 contacts through phone calls or home visits	Patients with CHF had an overall decrease in mortality with TC interventions. Provider communication is an essential aspect of TC including a multidisciplinary approach. One driver of patient satisfaction is having a dedicated individual throughout all of TC interventions. Limitations: Lacking standardized interventions made it difficult to compare studies equally. Data was limited in the time at 3 month and 18 month post-intervention, leaving a gap in data. Synthesis: A proactive approach to TC is key to improving outcomes for patients with chronic conditions. Designing interventions to including patient education, care coordination, dedicated personnel for contacting patients, and a lengthy follow up process to last up to 6 months are key to TC success.
McCay, C., Park, C., Chang, J., Brackbill, M., Choi, J., Lee, J., and Kim, S.	2019	Systematic review and meta-analysis of pharmacist-led transitions of care services on the 30-day all-cause readmission rate of patients with congestive heart failure	n/a	Clinical Drug Investigation	To determine the effect of pharmacist-led transitions of care on 30 day all-cause readmission rates for patients with CHF	Level II 4 RCTs, 2 retrospective natural history studies	pharmacy-driven interventions, medication compliance, transitions of care	n/a	6 studies	Medline, CINAHL, Web of Science, Embase, Cochrane Library and clinicaltrials.gov were searched for applicable studies	All studies included a pharmacist-led intervention	Usefulness: While many centers use transitions of care, there is no universal method. Pharmacists are key players in transitions of care due to the complexity of medication management. Limitations: this article only assessed interventions that were pharmacy-driven, and excluded other multidisciplinary team members' transitions approaches. Synthesis: CHF patients who receive comprehensive pharmacist-led transitions of care interventions are less likely to be readmitted to the hospital. It is suggested that patients are more likely to comply with medication instructions, and perform self-management when provided transitions interventions.
Naylor, M., Hirschman, K., Toles, M., Jarrin, O., Shaid, E., & Pauly, M.	2018	Adaptations of the evidence-based Transitional Care Model in the U.S.	n/a	Social Science & Medicine	To describe adaptations of the Transitional Care Model (TCM) to different aspects and levels of care.	Level V Qualitative review of adaptations of the TCM Model	TCM adaptations	39- question online survey for participants to describe their use of the TCM and any outcomes.	582 survey respondents and 21 interviews with practitioners	survey was an online survey and interviews were via phone or email.	582 survey respondents and 21 interviews with practitioners from diverse healthcare settings including community-based organizations and well distributed across the U.S. 84% of respondents had been involved in TC for more than a year.	Usefulness: This article describes the usefulness and adaptations of the TCM in practice. Synthesis: 59% of survey respondents reported using the TCM. 96% of those who used it reported major adaptations to the model, but still were consistent with at least 6 out of 10 of the TCM foundational criteria. One of the primary components that were modified were the use of APRNs to deliver care, hospital to home services, and relying on the same individual to deliver care throughout services. This demonstrates that efficacy of the TCM is not determined solely by the method utilized, but that the model may be adapted based on resource availability and funding. Limitations: qualitative study with interviews and surveys allow for bias, poor response rate.

Roper, K., Ballard, J., Rankin, W., & Cardarelli, R.	2017	Systematic review of ambulatory transitional care management (TCM) visits on hospital 30-day readmission rates	n/a	American Journal of Medical Quality	To review transitional care services as they relate to Medicare reimbursement	Level IV No RCTs, but 3 case- control studies	ambulatory medicine, transitions of care, care coordination	n/a	3 studies	Medline, Cochrane Library search for peer- reviewed publications	3 total articles were selected due to having a full transitional care process that was eligible for Medicare reimbursement. Across the 3 studies, over 15000 patients received TCM	Usefulness: A systematic risk assessment is key for identification of patients in need of TC. TC is an important component for patient care as well as for reimbursement by Medicare. Limitations: There is a limited number of studies that include all of the elements that are reimbursable by Medicare, which limits the overall quality of evidence. Synthesis: all 3 studies demonstrated a reduction in readmission rates for patients who received TC. Inclusion of a series of clinical interventions should be developed to maximize efficacy of the TC interventions.
Shaw, J., Sethi, S., Vaccaro, L., Beatty, L., Kirsten, L., Kissane, D., Kelly, B., Mitchell, G., Sherman, K., & Turner, J.	2018	Is care really shared? A systematic review of collaborative care (shared care) interventions for adult cancer patients with depression	n/a	BMC Health Services Research	To " identify components, delivery and roles and responsibilities within collaborative interventions for depression in the context of cancer"	Level I 8 RCTs	collaborative care, oncology, depression	n/a	8 RCTs	CINAHL, EMBASE, Cochrane, and Ovid MEDLINE databases were searched to identify studies.	All studies included multidisciplinary collaborative care interventions for adults (>18) with cancer	The hallmark of collaborative care is the inclusion of assessment, follow up, and a multidisciplinary approach. For patients with depression, it is essential to have a mental health provider as a member of the team. Limitations: This study does not address how to provide these interventions in rural health areas without access to mental health providers. Synthesis: The single most important aspect of care, as identified by these studies was the increased amount of interdisciplinary communication. No matter the diagnosis, or intervention, having dedicated individuals who communicate effectively about changes in patient status or patient needs is essential for collaborative care interventions.
Toles, M., Colon-Emeric, C., Asafu-Adjei, J., Moreton, E., & Hanson, L.	2016	Transitional care of older adults in skilled nursing facilities: A systematic review	n/a	Geriatric Nursing	To determine if transitional care interventions improve mortality, readmission rates, quality of life or functional status, AND to describe the interventions, methods for implementation, and resources for transitional care for patients going from a skilled nursing facility to home	Level I-III Systematic review of 6 RCTs and non- randomized CTs	transitional care, geriatrics	n/a	10 studies, 2 RCTs, 4 non- RCTs	Literature review and database search for	6 studies found (2 RCTs and 4 non- randomized controlled trials)	Limitations: Studies failed to provide robust data that linked the transitional care interventions to reduction in mortality, or 30-60 day readmissions. Most data is cross-sectional, and does not measure effectiveness of interventions over time. Synthesis: Transitional care interventions improve quality of life in patients leaving a SNF to go home. Implementation of transitional care in SNFs is limited by resources including provider availability. More information is needed to determine the significance of linking patients with transitional care interventions for the entire continuum of care from acute care discharge to SNF to home.
Vergara, F., Sullivan, N., Sheridan, D., & Davis, J.	2018	The best practice for increasing telephone outreach: An integrative review	n/a	Professional Case Management	To review Telephone Follow Up (TFU) interventions and determine how to increase services and outreach	Level II 4 RCTs, 1 qualitative, 4 quasi-experimental studies	telemedicine, telephonic case management, care coordination, models of transitional care	n/a	9 studies	PubMed, Cochrane, CINAHL, EMBASE, Web of Science databases were searched to identify studies	All studies included TFU interventions for adult patients.	Telephone follow up has been shown to decrease hospital readmissions, improve patient satisfaction, and is a hallmark of care transitions. Limitations: There is no universally accepted process for TFU, leading to inability to pick one specific intervention method to demonstrate success. Synthesis: TFU is an effective component of care coordination and transitions of care. Meeting with patients face-to-face, at least once during a transitions program increases reach rates and success. Developing a systematic TFU process either solely or in conjunction with other types of care transitions interventions is important to identify atrisk patients and decrease readmissions and post-discharge complications.

Appendix C

Press Ganey Patient Satisfaction Questions – Transitions of Care Domain

1. During this hospital stay, staff took my preferences and those of my family or caregiver into account in deciding what my health care needs would be when I left.
☐ Strongly disagree
☐ Disagree
□ Agree
☐ Strongly agree
2. When I left the hospital, I had a good understanding of the things I was responsible for in managing my health.
☐ Strongly disagree
☐ Disagree
□ Agree
☐ Strongly agree
3. When I left the hospital, I clearly understood the purpose for taking each of my medications.
☐ Strongly disagree
☐ Disagree
□ Agree
☐ Strongly agree
☐ I was not given any medication when I left the hospital

Appendix D

Oncology Transitional Care Algorithm

- 1. The navigator will contact and engage with the patient during the inpatient visit. This visit will include:
 - a. Collaboration with the patient to identify patient-centered goals.
 - b. Discuss the discharge and transition plan.
 - c. Complete an assessment to identify potential needs or barriers to care.
- 2. Follow the patient's progress while in the hospital, which may include additional visits and monitoring of the electronic health record (EHR).
- 3. Work in collaboration with the discharge team to coordinate the care patients moving from one level of care to another to ensure a safe transition across the post-acute care continuum.
- 4. Follow up with the patient within 24-48 hours of discharge, 7 days and 14 days post-discharge.
 - a. Utilize a SMART transition format when performing outreach to patients.
 - i. S signs/symptoms to report
 - ii. M medication reconciliation and review,
 - iii. A appointment (ensuring follow up appointment established)
 - iv. R reviewing relevant results
 - v. T having the patient "teach-back" any information reviewed.
- 5. Document the encounter in the EHR.
- 6. Provide ongoing follow-up with the patient and care team based on identified needs and findings.

Note:	This algorithm was adapted from the	Transitional Care Policy &	Procedure
(, 2019).		

Appendix E

Inpatient Readmission Risk Score Tool (IPRS)

All patients who have a risk score of 3 or greater will receive TC services. Each statement is worth one point.

- Patient has no PCP
- Patient's age is between 50-89 years old
- Patient is single or has caregiver concerns
- Length of stay > 5 days
- Patient has a lung mass or diagnosed lung cancer
- Patient has > 1 ED visit in last 6 months
- Patient on Medicaid or Medicare or Self-Pay
- Patient has a history of depression or drug use
- **Patient is homeless or has a poor living situation
- **Patent is a current or former smoker
- **Patient lives greater than 20 miles from the cancer center
- **Patient has started on IV or oral chemotherapy within the last 30 days

Note: The tool has been modified to capture additional needs of lung cancer patients

Appendix F

Data Collection Tools

			Readmissions			
		Encounter 1	Encounter 2	Encounter 3	Encounter 4	
Patient Code	Hospital Discharge Date	Prior to Discharge	24-48 Hours Post- Discharge	7 Day Post-Discharge	14 Day Post-Discharge	Hospital Readmission During Project Phase (Nov 2020 - April 2021)
1	10/7/2020	10/6/2020	10/9/2020	10/16/2020	10/23/2020	No
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

Patient Experience Question	Academic Peer Group Mean		npatient Medical O	ncology Unit	
		Pre			
		Implementation (FY20,Q3)	Month 1	Month 2	Month 3
When I left the hospital, I had a good understanding of the things I was responsible for					
in managing my health.	53.85	48.98			
When I left the hospital, I clearly understood the purpose for taking each of my					
medications.	61.47	63.64			
During this hospital stay, staff took my preferences and those of my family or caregiver into account in deciding what my health care needs would be when I left.	46.99	43.75			

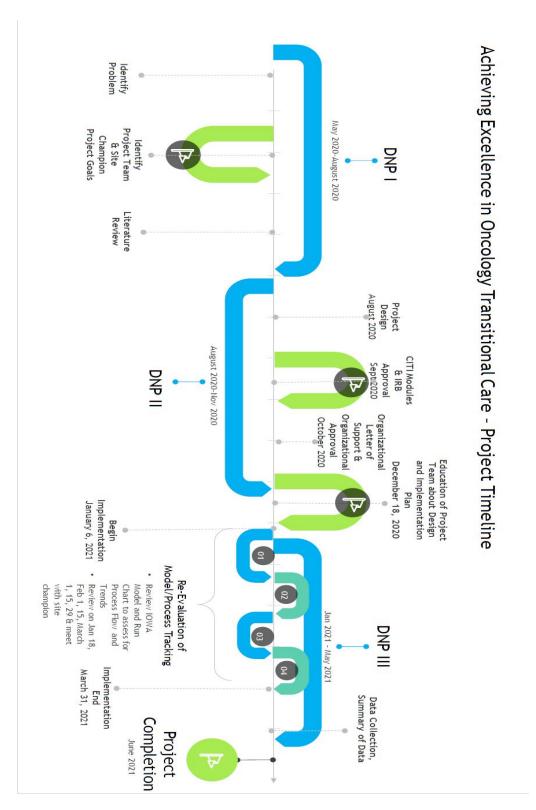
Appendix G

Navigator Intervention Form Screenshot

Intervention Form	† ‡						
Intake	*						
Type of Visit							
Initial Evaluation Recheck Record Review Advice Only							
Location of Visit							
Inpatient Clinic/Office Telephone Email Outpatient infusion Outside provider office Other (specifiy in comments)							
Patient needs and barriers to care							
☐ Cultural needs ☐ Coordination of Care ☐ Distance for care ☐ Knowledge deficit ☐ Emotional issues/Fear/Anxiety	■ ▼ 🗅						
☐ End of life concerns ☐ Financial concerns/disability ☐ Low health literacy ☐ Medication assistance							
☐ Caregiver/Family issues ☐ Symptom management ☐ Transportation ☐ Housing ☐ Incarcerated							
☐ No barriers identified							

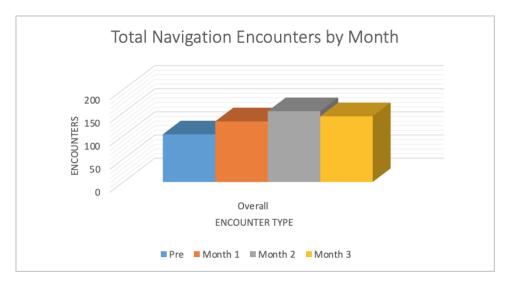
Appendix H

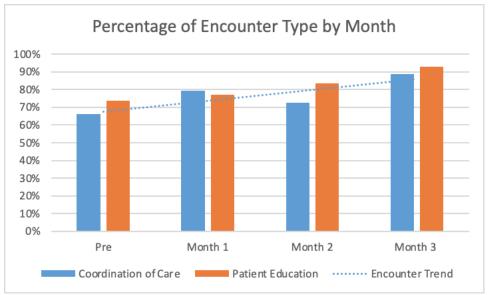
DNP Project Timeline



Appendix I

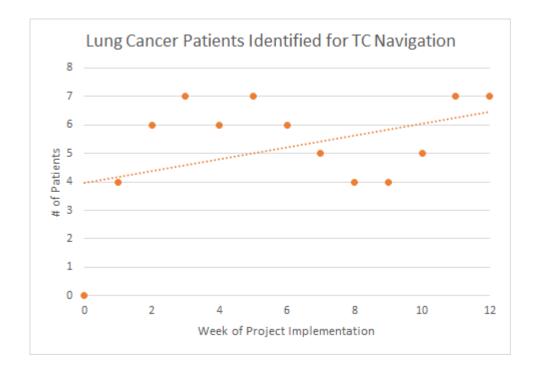
Navigation Encounters





Appendix J

Number of Patients Identified for Oncology Transitional Care



Appendix K

DNP Project Budget

	Oncology T	ransitional Cara P	noiset Dudget	
	Oncology 1	ransitional Care P		otal
	Lal	bor		1,805
	Hours	Rate		
	Encou	ınters	-	
Daily Chart Review by RN				
Navigator	30	\$35.00	1,050.00)
Encounters (62 patients x 4				
encounters each)	124	\$40.00	4,960.00)
	Team M	leetings	-	
RN Navigator	12	\$35.00	420.00	
SW Navigator	12	\$30.00	360.00	
Project				
Development	30	\$40.00	1,200.00)
Project	0.5	Φ40 00	2 000 0	^
Implementation	95	\$40.00 plies	3,800.00	<u>)</u>
	-			
	Quantity	Rate		
Paper	100	\$0.10	10.00	
Pens	10	\$5.00	5.00	

Appendix L

Doctor of Nursing Practice Essentials

	Description	Demonstration of Knowledge
Essential I Scientific Underpinning for Practice	Competency – Analyzes and uses information to develop practice Competency -Integrates knowledge from humanities and science into context of nursing Competency -Translates research to improve practice Competency -Integrates research, theory, and practice to develop new approaches toward improved practice and outcomes	Literature review for transitional care and impact for patient, nurse, system outcomes Translates findings regarding transitional care to oncology population Utilized evidence-based models to guide project (IOWA model and Dr. Mary Naylor's Transitional Care Model)
Essential II Organizational & Systems Leadership for Quality Improvement & Systems Thinking	Competency – Develops and evaluates practice based on science and integrates policy and humanities Competency – Assumes and ensures accountability for quality care and patient safety Competency - Demonstrates critical and reflective thinking Competency - Advocates for improved quality, access, and cost of health care; monitors costs and budgets Competency - Develops and implements innovations incorporating principles of change Competency - Effectively communicates practice knowledge in writing and orally to improve quality Competency - Develops and evaluates strategies to manage ethical dilemmas in patient care and within health care delivery systems	 Project focus is primarily on access to care and provision of cost-effective care coordination for oncology patients Conducted multiple oral presentations to project team, service line leadership, and organizational lunch/learns Developed poster presentation and submitted abstract to national organization Ensured quality care and patient safety during DNP project; ensured evidence-based strategies are utilized to guide oncology navigator work flow
Essential III Clinical Scholarship & Analytical Methods for Evidence-Based Practice	Competency - Critically analyzes literature to determine best practices Competency - Implements evaluation processes to measure process and patient outcomes Competency - Designs and implements quality improvement strategies to promote safety, efficiency, and equitable quality care for patients Competency - Applies knowledge to develop practice guidelines Competency - Uses informatics to identify, analyze, and predict best practice and patient outcomes Competency - Collaborate in research and disseminate findings	 Utilized existing transitional care workflow at the organization to develop new process for oncology navigation team Worked with multidisciplinary care team to provide evidence-based interventions Conducted literature review and analysis for evidence based practices to develop strategies within organization Collaboration with informational services to develop appropriate workflow within the electronic health record
Essential IV Information Systems – Technology & Patient Care Technology for the Improvement	Competency - Design/select and utilize software to analyze practice and consumer information systems that can improve the delivery & quality of care Competency - Analyze and operationalize patient care technologies Competency - Evaluate technology regarding ethics, efficiency and accuracy	Utilized EPIC electronic health record (EHR) to develop risk stratification criteria for patients, document encounters View reports generated from the EHR to analyze data regarding navigation encounters

&	Competency - Evaluates systems of care using health	Press Ganey database was
Transformation	information technologies	utilized to access, view reports
of Health Care	information commonegies	for patient satisfaction data
	Description	Demonstration of Knowledge
Essential V Health Care Policy of Advocacy in Health Care	Competency- Analyzes health policy from the perspective of patients, nursing and other stakeholders Competency – Provides leadership in developing and implementing health policy Competency – Influences policymakers, formally and informally, in local and global settings Competency – Educates stakeholders regarding policy Competency – Advocates for nursing within the policy arena Competency- Participates in policy agendas that assist with finance, regulation and health care delivery Competency – Advocates for equitable and ethical health care	Completed CITI modules, IRB approval process –determined that IRB approval was not necessary for this project Reviewed Centers for Medicare and Medicaid's guidelines related to the provision of transitional care Advocated for project sustainability in order to support all cancer patients, not just those impacted by the project
Essential VI Interprofessional Collaboration for Improving Patient & Population Health Outcomes	Competency- Uses effective collaboration and communication to develop and implement practice, policy, standards of care, and scholarship. Competency – Provide leadership to interprofessional care teams. Competency – Consult intraprofessionally and interprofessionally to develop systems of care in complex settings	 Collaborated with multidisciplinary team to design, implement, and evaluate project Lead project team (interprofessional care team) during project phases Developed and implemented standard of care change for oncology navigation model that will be sustainable for future work Education of interprofessional team on evidence-based practice, interventions, outcomes related to transitional care in oncology
Essential VII Clinical Prevention & Population Health for Improving the Nation's Health	Competency- Integrates epidemiology, biostatistics, and data to facilitate individual and population health care delivery Competency – Synthesizes information & cultural competency to develop & use health promotion/disease prevention strategies to address gaps in care Competency – Evaluates and implements change strategies of models of health care delivery to improve quality and address diversity	 Conducted project during COVID-19 pandemic, where there were known challenges within population-based health initiatives The entire project centered around transitional care with a goal of improving access to and eliminating gaps in care for at- risk, underserved populations Advocated for health promotion and adherence for the oncology treatment plan with patients/caregivers
Essential VIII Advanced Nursing Practice	Competency- Melds diversity & cultural sensitivity to conduct systematic assessment of health parameters in varied settings Competency – Design, implement & evaluate nursing interventions to promote quality Competency – Develop & maintain patient relationships Competency – Demonstrate advanced clinical judgment and systematic thoughts to improve patient outcomes Competency – Mentor and support fellow nurses	 Collaborated as a team of oncology navigators and SW from diverse cultural and educational backgrounds to develop and implementation project Weekly meetings with project team to discuss challenges,

Competency- Provide support for indiv systems experiencing change and transit Competency –Use systems analysis to efficiency, care delivery, fiscal responsitive, and quality outcomes me	team to improve patient care evaluate practice evaluate practice ibility, ethical team to improve patient care Project lead, mentor and site champion were all Clinical