# IMPROVING NEW PATIENT CANCER TREATMENT EDUCATION: A QUALITY IMPROVEMENT PROJECT

by

Jamie Michelle Wilcox

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# ABSTRACT

**Background:** A cancer diagnosis invokes high levels of uncertainty and anxiety. Healthcare professionals task themselves with providing appropriate education to help patients traverse their cancer treatment experience. Effective communication and educational interventions help patients acquire appropriate coping strategies to manage the disease process and reduce uncertainty.

**Purpose:** This project aimed to improve patient satisfaction and decrease anxiety and uncertainty through an enhanced patient education process. The project took place in a rural outpatient oncology center. Participants included newly diagnosed oncology patients receiving intravenous (IV) chemotherapy/immunotherapy and clinic staff.

**Method:** This project used the Demming Cycle quality improvement method. The education components drew on the guidance of literature reviewed for best practices and national guidelines for patient education and teaching techniques. Data obtained through surveys from patients and RNs, observations from the project lead, and additional feedback from staff informed the development of the education visit components.

**Intervention:** A nurse education visit was scheduled the week before IV treatment started and included a learning needs assessment, clinic tour, education on port-a-cath care, regimen-specific side effects and self-management, and how and when to contact the healthcare team. Nurses provided content using the teach-back method.

**Results:** Patient and staff completed surveys over six weeks of implementation. Sixteen patients completed surveys. 100% (n=16) were confident they could manage their symptoms at home after the education visit. Thematic findings from survey responses regarding the most valuable education piece included Theme 1, logistics of treatment; Theme 2, anticipated side effects and management; Theme 3, other value of knowledge and education regarding managing *the disease process*. Nine nurses were surveyed 17 times during the project, with each nurse completing 1 to 2 education sessions. 88% (n=17) of nurses surveyed felt the education visit improved from the previous system, and 71% (n=17) of nurses found the teach-back method was supportive of patient outcomes surrounding patient education.

**Conclusion:** Providing a structured education visit for new oncology patients receiving chemotherapy/immunotherapy improved patient confidence in identifying and managing symptoms and side effects of therapy at home. The teach-back method reinforced the education content and demonstrated an understanding of the material.

# CHAPTER ONE

# REVIEW OF THE LITERATURE

## Introduction

The National Cancer Institute estimates in 2023, there will be 1,958,310 new cancer diagnoses, and as of 2020, they reported about 17,113,494 people living with cancer in the United States (Surveillance, Epidemiology, and End Results Program (SEER), 2021). The rate of cancer survivors continues to increase due to improved screening, more effective treatments, and improved supportive care. Cancer survivorship starts the moment someone receives a diagnosis of cancer, which encompasses all people currently undergoing treatment, those who have completed treatment, and those who may need treatment throughout the rest of their lives. The job of healthcare professionals does not only focus on modalities to rid patients of their cancer but also on managing the side effects of the treatment modalities and partnering with our patients to help them live and thrive with their cancer diagnosis.

The cancer experience remains daunting. Patients live through many emotions and present with varying levels of education and life experiences, all of which affect how they will cope with their new reality. Oncology nurses play a pivotal role in providing patients with the tools and education to manage the symptoms of cancer and its treatment necessary for patients to maintain their quality of life and promote satisfaction with their care. Poor informational support and processes lead to dissatisfied, anxious, and confused patients (Beaver et al.,2016; Gallegos et al., 2019; Jabaley et al., 2020; Mann, 2010). Patient education is pivotal in helping patients with symptom management and recognizing and reporting adverse events to their oncology team

(Portz and Johnston, 2014; Wood et al., 2019). Research has shown that education provided to patients receiving chemotherapy reduces anxiety and depression, increases knowledge, and provides a better quality of life and greater satisfaction with care (Beaver and Magnan, 2016; Jabaley et al., 2020).

Oncology nurses consistently provide education to their patients. The 2016 Updated American Society of Clinical Oncology (ASCO)/Oncology Nursing Society (ONS) Chemotherapy Administration Safety Standards Domain 2 "Treatment Planning, Patient Consent, and Education" provides the most relevant guideline for patient education. Information provided to the patient must include the patient's diagnosis; goals of treatment, duration, schedule, and regimen; long and short-term adverse effects; symptoms that require the patient to contact their health care team; handling medication and body secretions at home; follow up plans; and how to contact their health care team. However, the problem with cancer treatment education lies in the lack of a consistent, evidence-based, formal delivery process while considering the patient's needs, values, and preferences.

## Background and Significance: Regional Population

A rural community hospital in Montana has experienced a significant decrease in patient satisfaction, as identified on Press Ganey scores, in their Cancer Care Clinic over the last two and a half years. The hospital serves about 97,000 residents from a five-county area. The oncology clinic currently serves 2579 patients, with approximately 62 new patients monthly. They average three new patient treatments each week. Reasons for the lower Press Ganey satisfaction scores are many. Since 2020, the clinic has utilized 48 different locum tenum providers, each with different philosophies and routines, lost 16 nurses, medical assistants

(MAs), and schedulers due to retirement, job transfers, or resignation, employed 10 new hires with little to no oncology experience or minimal nursing experience, three director changes, scheduling shortages filled with traveling nurses, and scheduling shift changes. Numerous changes in the normal flow and routine of the clinic have occurred during this time. Combining these challenges, patients and staff face difficulties establishing new routines that effectively meet expectations and needs.

In conversations with the Nursing Director of the hospital and the Director of the cancer clinic, it was discussed that there is a need to improve the staff's communication with patients regarding their cancer treatment. Evidence shows that when healthcare providers (HCPs) meet patients' educational needs, patients have increased knowledge, enhanced understanding, and improved adherence to instructions, promoting optimal patient outcomes, satisfaction, and safety (Kean et al., 2016). In addition, oncology nurses providing education to their patients may experience increased satisfaction and overall wellness as their patients become better able to manage symptoms and improve their coping skills (Portz and Johnston, 2014).

## Theoretical Framework: Uncertainty In Illness

Mishel's uncertainty in illness theory (UIT) provided the framework for assessing the problem of delivering treatment education to newly diagnosed adult oncology patients. Mishel defines uncertainty "as the inability to determine the meaning of illness-related events" and the health outcome is unknown (Mishel, 1988, p.225). UIT includes four major components: (1) antecedents generating uncertainty, (2) uncertainty appraisal, (3) uncertainty coping, and (4) uncertainty and adaptation (Mishel, 1988).

Mishel (1988) further divides each component. The antecedents of uncertainty include the stimuli frame (symptom pattern, event familiarity, event congruence), cognitive capacity, and structure providers (available resources to assist the patient). Zhang (2017) explains when patients experience unfamiliar new-illness related stimuli, it may lead to uncertainty. They may experience unfamiliar symptoms, environments, or activities. Or their experience may not be consistent with their expectations. The cognitive capacity is the patient's ability to process information, interpret illness-related stimuli, and construct meaning in the event (Mishel, 1988; Zhang, 2017). Structure providers also impact patients' interpretation of illness-related stimuli and more accurately understand the experience by providing effective education, social support, and trust and confidence with their healthcare providers (Mishel, 1988; Zhang, 2017).

Uncertainty appraisal is the cognitive process of determining whether the stimuli is a danger or an opportunity. Stimuli appraised as a danger with a potentially harmful outcome, may prompt patients to use coping strategies to reduce their uncertainty. In contrast, patients may use coping strategies to maintain uncertainty if the stimuli are appraised as an opportunity, signifying a potentially positive outcome (Mishel, 1988; Zhang, 2017).

Coping with uncertainty depends on the stimuli's appraisal as a threat or opportunity. Mishel proposes stimuli appraised as a threat or danger likely resulting in a harmful outcome based on a person's presumptions, use coping methods aimed to reduce uncertainty and minimize the emotional distress generated by the stimuli. Coping methods associated with a threat appraisal are mobilizing strategies such as taking direct action, maintaining vigilance, and seeking information; and affect-control strategies such as faith, emotional disengagement, and emotional support. Whereas, when the stimuli are gauged as an opportunity, resulting in a positive outcome, using a buffering strategy such as avoidance, selective ignoring, or neutralizing threatening information creates an illusion to maintain the situation (Mishel, 1988). Stimuli appraised as an opportunity occurs when the alternate option is viewed as a detrimental inevitability or having a poor outcome. This opportunity appraisal enables a person to block the perception of a bad outcome, hope remains, and the patient maintains an uncertain state. If the uncertainty disappears, the patient must acknowledge the negative threat.

Adaptation to the stimuli occurs if the coping strategies are effective. The UIT does not claim one type of coping as better than another but rather, connects effective coping strategies to each individual's appraisal of their uncertainty: characterizing their ability to adjust to new information and experiences associated with illness-related stimuli (Zhang, 2017). The UIT provides the framework to understand newly diagnosed cancer patients' uncertainty in their new situation and assists oncology nurses in anticipating and evaluating each patient's sources of uncertainty. Thereby providing tools and education to help their patients acquire appropriate coping strategies to manage uncertainty.

## Purpose

As guided by the Uncertainty In Illness theory, the purpose of this scoping review of the literature is to assess the identification of newly diagnosed oncology patients' education/learning needs before beginning systemic treatment, standardize topics and discussions to include in new oncology patient education and recognize delivery methods and knowledge assessments necessary to increase knowledge retention, improve quality of life, and increase patient satisfaction which will then inform a quality improvement project.

## Method

Montana State University library services initially guided this search to compose appropriate search terms. The terms "patient education", "quality improvement", "oncology", "teach-back method", "satisfaction", and "uncertainty of illness" were used for this search. The initial search included articles using the Web of Science, CINAHL, PsycINFO database, and reference lists to identify articles that report on interventions to increase patient satisfaction while reducing uncertainty and anxiety through patient education with oncology treatment. An additional search was conducted within the Oncology Nursing Society's database using the keywords "chemotherapy patient education" and "patient satisfaction". The literature search and eligibility review took place in August and September 2023.

### Eligibility

The literature review included articles published from 2007- 2021 (inclusion of older articles occurred only if there was supportive evidence). Publications were included if: they studied adults newly diagnosed with cancer receiving chemotherapy/immunotherapy treatment in inpatient/outpatient oncology centers; published in English; full text was available and were peer-reviewed sources. Articles were excluded if: education was delivered post-treatment, were duplicates, or were from dissertations or theses.

### Study Selection

A total of 30 articles were included in the combined search. A Title and abstract review yielded twenty-one articles that met the inclusion criteria. Further refinement through a full text of inclusion criteria limited publications to those focused on strategies to deliver patient education and patient satisfaction. Fifteen articles were included in this scoping review (See Figure 1).

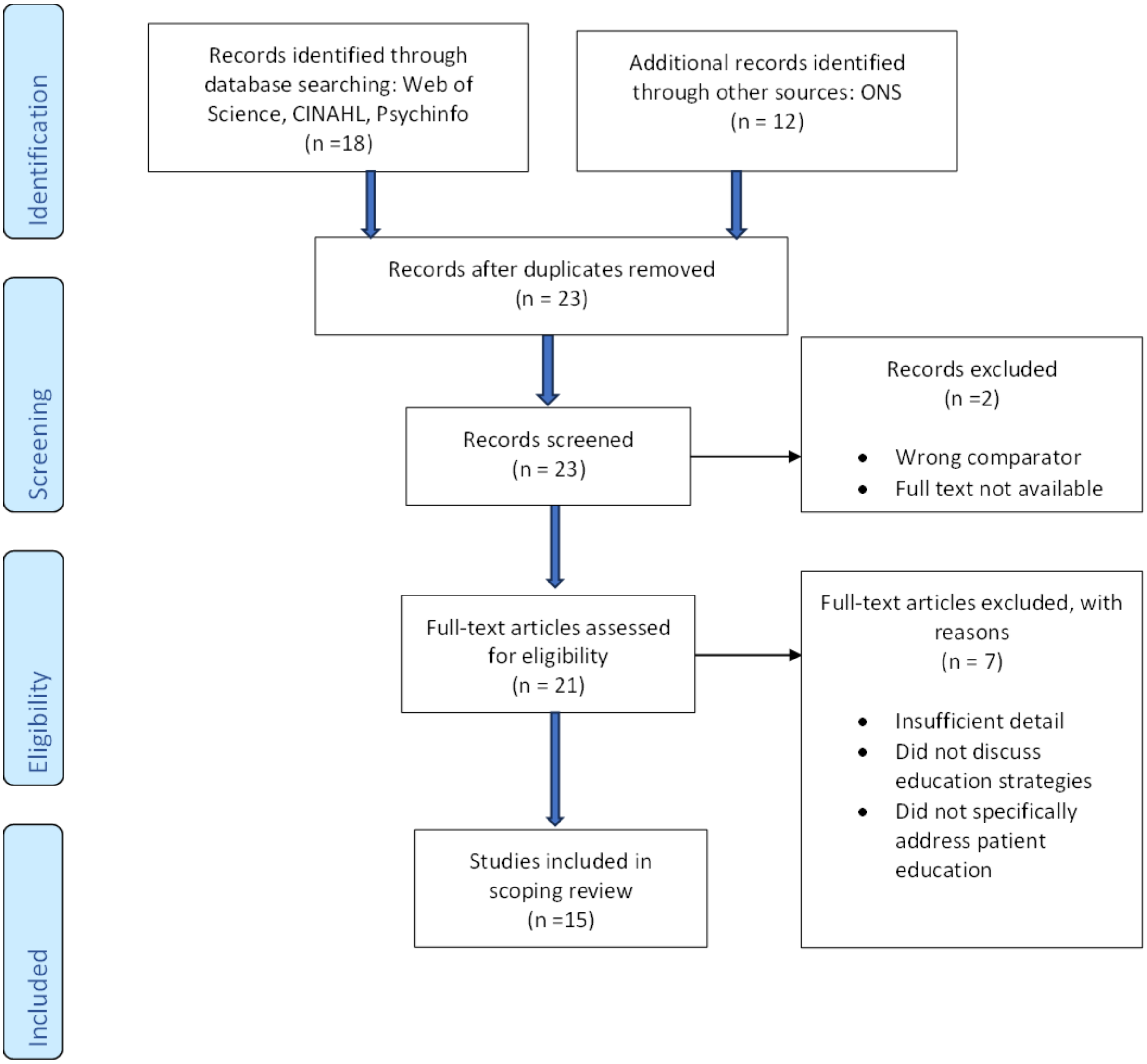

Figure 1. PRISMA Diagram

Research has not yet found the single best intervention to decrease anxiety and uncertainty or to increase patient satisfaction in the oncology treatment setting. A combination of potential strategies is discussed. The articles' significance produced four categories of interventions:

patient needs assessment; timing and location; standardization; information retention and teaching methods. The level of evidence (LOE) ranged from level one to level eight. The median LOE was level five, nonexperimental/observational studies. See Appendix A for a list of included publications and key discussion traits corresponding to the thematic categories.

## Discussion

Common themes among the articles presented themselves within the literature: identifying patient learning needs and preferences helps patients retain information and improve comprehension while increasing patient satisfaction and reducing anxiety; providing information in a manner that allows patients time and space to process the education; delivering consistent, evidence-based side-effect management strategies; and use of a method to assess retention and recognition of pertinent information.

### Learning Needs Assessment

Patients with newly diagnosed cancer will receive information on their disease, testing, treatment, side effects, psychosocial support, financial matters, and more. Most of the information they initially receive will also be provided during an extremely intense, stressful, and high-anxiety state. Due to high anxiety decreasing a patient's ability to think clearly, 40%-80% of medical information provided by healthcare providers (HCPs) is forgotten (Portz and Johnston, 2014). Learning about the patient before starting the education process provides valuable insight to determine the best method and content (Mann, 2011) and to determine health literacy, reading skills, preferences for learning, cultural or religious aspects, pain level, and amount of anxiety (Wood et al., 2019). Additionally, using adult learning principles can assist nurses in tailoring cancer education to their patients (Lasa-Blandon et al., 2019; Portz and Johnston, 2014). Malcolm Knowles's principles of adult learning include the following: adults need to be involved in the content and process of education; adults' past experiences help them learn; adults need a reason to learn; and adults are focused on solving problems rather than memorizing content (Lasa-Blandon et al., 2019).

Mann (2011) implemented a quality improvement project using a tool designed to assess their patients' specific needs and personal preferences. The assessment tool focused on the cognitive, psychomotor, and affective domains of learning. Information was then selected based on this intervention. The data found that using a learning needs assessment tool to compile an individual education intervention explicitly geared to meet patient needs and preferences helped to increase patient satisfaction significantly, 88% post-implementation vs 1% pre-implementation; and lessened anxiety, 69% had reduced anxiety post-implementation vs 30% having reduced anxiety pre-implementation. Lehmann et al. (2020) observed that patient-centered communication appears to show greater patient satisfaction, and adapting the amount and type of information based on patients' preferences potentially ensures they receive the information desired and that is relevant to them. In Lehmann et al. randomly controlled trial using video vignettes of real-life scripted scenario consultations and participants or "analog patients" (APs) who were required to imagine themselves as the patient in the video, they systematically varied the video patients' information preferences and the amount of information the provider presented. This study categorized patients as either limited or extensive information seekers; the participants were all cancer patients/survivors. They found that the APs evaluation of satisfaction and perceived trust was not affected by tailoring the amount of medical information to video patients' information preferences; however, the personal information preferences of the APs determined their medical information recall and recognition, such that those who were extensive information seekers were able to recall more information. Lehman et al. extrapolated that limited information seekers recognized even less of the presented information when they received extensive information, noting that providing patients with more information than they desire should be avoided.

Furthermore, several studies have shown patients' and HCPs' concerns regarding quality care may not align (McMullen et al., 2017). McMullen et al. focused their study on patient and HCP perspectives on high-quality care and the need for communication tools to improve the delivery of high-quality care. Several topics important to patients, such as the effects of treatment on family and children, financial options, and sexuality, were not mentioned or infrequently discussed by HCPs. They report that patients believe physicians' perspectives to be barriers to communication because they focus on treating and eradicating the disease instead of treating the patient as a whole. These findings illustrate the importance of effective communication between HCPs and patients, particularly in the early stages of diagnosis and treatment, to elicit patient goals and desires regarding treatment (McMullen et al., 2017).

## Timing

Patient education is a complex process encompassing assessment, timing of information given, reinforcement, and evaluation of information retention (Valenti, 2014). The 2016 ASCO guidelines state the education process should occur before the first administration of treatment. Garcia (2014) conducted an integrative review of the effects of education on anxiety levels in patients receiving chemotherapy for the first time. She found that patients had higher satisfaction scores and lower anxiety levels if they received education before the first day of chemotherapy compared to those who received their education on the same day as receiving chemotherapy. Moreover, Garcia notes several studies also describe providing education in an area that supports learning and suggests using a quiet area of the facility rather than in a busy treatment setting. Portz and Johnston (2014) conducted a small pilot study to develop evidence-based improvement strategies for delivering chemotherapy education. While the researchers did not collect quantitative data, anecdotal evidence found that nurses valued the individual attention they could give to their patients and families. Comments from the patients indicated they felt prepared and knew what to expect with the first treatment. In another quality improvement model, Mann (2011) compared chemotherapy education given before the first day of treatment in a one-on-one setting to chemotherapy education provided in the infusion area just prior to the treatment. The patients in group A (education given before the first day of treatment) were extremely satisfied, offering a few suggestions for improvement of their education experience. Versus patients in group B (education given just prior to infusion), patients offered numerous suggestions, most commonly suggesting being given more information sooner than the day of treatment. Piombo et al. (2020) completed a pre-chemotherapy educational intervention among ethnically diverse patients and analyzed the intervention using pre- and post-intervention survey data rating knowledge and anxiety. The results showed mean self-reported knowledge increased from 5.99 to 6.33 ($p<0.001$), and mean anxiety decreased from 3.13 to 2.97 ($p=0.051$). However, among Hispanic/Latino patients, anxiety significantly increased compared to non-Hispanic patients by 0.22 points after the intervention. They also found an increase in anxiety post-intervention by 0.38 points among patients who reported their health as "poor." Their intervention supports providing chemotherapy education before the first infusion to increase knowledge and decrease anxiety; moreover, this study reinforces the usefulness of conducting a thorough learning needs assessment that includes self-rated health and cultural determinants (Piombo et al., 2021).

## Standardizing Education Topics

Although the best delivery medium has not yet been discovered, chemotherapy education that is not standardized can equate to ineffective and inefficient education for patients starting treatment. Standardizing cancer treatment education provides consistency by ensuring the necessary elements are delivered. Three studies conducted pre/post-chemotherapy education evaluations and found increased patient knowledge of treatment, reduced overall anxiety, and increased patient satisfaction. Apor et al. (2018) implemented a structured nurse-led chemotherapy education session lasting 60-90 minutes; results showed statistically significant increases in perceived knowledge of the treatment schedule, potential side effects, and use of medication to prevent nausea ($p<0.0001$ in all sections). They also saw a significant reduction in patient-reported generalized anxiety about treatment, with 80 patients reporting "quite a bit" or "very much" anxiety before education and only 49 patients reporting the same after education ($p=0.0294$).

Similarly, Dalby et al. (2013) developed an intervention using a standardized teaching checklist and treatment-specific calendar with relevant patient information. After implementation of the checklist and calendar in their patient education, they found Press Ganey scores increased, and their education assessment survey reported average satisfaction of 4.86 (on a 0-5 scale) regarding knowledge of management of chemotherapy side effects, as well as increases in feeling prepared for treatment and what to expect during chemotherapy. Further, staff participating in the new education process were surveyed and reported high satisfaction with the process. 88% found the checklist helpful, and 100% felt the materials were comprehensive. Portz and Johnston (2014) reinforced this strategy by creating a teaching script that covered self-management approaches and evidence-based interventions for each symptom related to treatment. The script also covered specific problems to report to the healthcare team and how to contact them. Gallegos et al. (2019) note that a lack of standardization may contribute to patient and nursing staff dissatisfaction. In their study on an interprofessional approach to standardizing processes, they found significant improvements in nursing staff satisfaction, a 26.5% increase, after implementing a standardized process for chemotherapy education. However, the same study produced high patient satisfaction scores pre- and post-implementation of standardized education.

A prechemotherapy checklist was developed by Mueller and Glennon (2007) after finding no formal education process existed to ensure nurses were delivering consistent information. No formal data was gathered pre- or post-implementation of the checklist; however, the oncology nurses found the checklist helpful in preparing patients before chemotherapy. Mueller and Glennon note the checklist offered a complete and consistent delivery of information. They also note the checklist can be easily adapted to other practices and customized to the patient's learning needs.

### Retention and Follow-up

Patients receive an overwhelming amount of new information in a short amount of time. A cross-sectional study by McMullen et al. (2017) used qualitative methods to understand patient and HCP perspectives relating to high-quality care and to determine the need for communication tools to improve care. Ongoing education and assessment of understanding are paramount in providing effective communication (McMullen et al., 2017). The patient education tool developed provides a thorough list of topics to discuss with patients, allows HCPs to evaluate patient understanding and determine further education needs, and allows patients to discuss questions and concerns at the beginning of care. A literature review conducted by Valenti (2014) reinforced the importance that patients understand how to manage their side effects and know when to call their healthcare team for help. Therefore, part of the education process should include evaluating information retention.

The teach-back method is a commonly used and evidence-based method to assess comprehension (Scott et al., 2019). This education strategy includes intervals during the education process in which the learner is asked to repeat in their own words what has just been taught by their healthcare provider; the provider then confirms their understanding or provides reeducation if necessary (Jabaley et al., 2020; Scott et al., 2019). The approach promotes health literacy, more robust communication, and reduces the risk of patient misunderstanding while allowing patients direct participation in their learning and care (Jabaley et al., 2020; Scott et al., 2019). Scott et al. surveyed oncology nurses after a mandatory one-hour class on the teach-back method, followed by practicing the technique with patients for two weeks to determine its effectiveness. A voluntary survey was conducted pre-implementation, one-month post-implementation, and three months post-implementation. Patient perceptions of care were measured using the institution's Press Ganey survey, with data from three months pre-implementation and again at three months post-implementation. The results indicated significant improvement in how convinced the nurses were of the importance of the teach-back method

($p<0.001$), and their confidence in using the teach-back method increased significantly at each time point measured ($p=0.048$ and $p=0.007$, respectively). Based on the Press Ganey scores, the patients' perceptions of instructions for home care increased from 82.6 to 84.4. Woods et al. (2019) also advocate for the use of the teach-back method during education for immune checkpoint inhibitor (ICI) therapy, as early recognition and reporting of immune-related adverse events (irAEs) may be critical to the patient's treatment plan.

## Practice and Policy Implications

Implications from this scoping review move fluidly through the systems in health care. Starting within the Social Policy system, the literature provides the necessary elements to establish a patient education process that meets Domain 2 of the ASCO/ONS Chemotherapy Administration Safety Standards and assists in meeting the requirements for the cancer center to receive the Quality Oncology Practice Initiative (QOPI) certification, a necessary achievement as part of a current agreement with a partnering institution. Implications within the macrosystem, or hospital organization, occur by measuring patient satisfaction using Press Ganey scores. Instituting a patient-focused education process may increase patient satisfaction, thereby increasing reimbursement, increasing patient loyalty, decreasing malpractice lawsuits, and, most notably, leading to better patient outcomes. Within the Mesosystem, patients receive most of their care within the oncology clinic. However, other departments are also involved. Using the tools to individualize patient education, other patient concerns may come to light. Finance, pharmacy, physical therapy or rehabilitation, nutrition, and radiology are departments in which much of the clinic's patient population will visit or consult at some point in their cancer treatment. Assessing and meeting patients’ needs earlier will mean the departments must work together to provide for those needs. Patient education elements in this review lie heavily within the microsystem, the oncology clinic itself. The program and the patients receiving education and care will touch every point in this system, where the bulk of improvements will occur. The scoping review provides the tools to affect improvements between the clinician's and the patient's interactions within the individual care provider and patient system. Ultimately, the education processes will support patients in the self-care system. They will receive and use the information to maintain their health at home and identify the situations or symptoms that require provider intervention.

## Conclusion

The scoping review of the literature supports implementing a patient-centric oncology education process tailored to patient literacy and preferences, offered before the first day of treatment in a setting conducive to learning. Standardize education topics to the specific treatment plans of each patient and assess for retention of the information throughout the process using the teach-back method. Personalized, timely, consistent, and pertinent education should reduce patient anxiety and depression, encourage self-management of side effects, promote communication between HCPs and patients, and improve patient outcomes and quality of life while improving patient satisfaction.

Using the UIT framework, the scoping literature review provides the necessary information to address areas pertinent to decreasing patients' uncertainty by addressing the stimuli frame (symptom knowledge and management, clinic environment) and structure providers (provider/staff communication, trust, and support). The framework assists patients in interpreting their new cancer diagnosis and developing appropriate coping strategies for each patient (self-management of symptoms, facilitation of hope), thereby leading to less or maintenance of uncertainty and successful adaptation to their illness.

# CHAPTER TWO

# QUALITY IMPROVEMENT PROPOSAL

## Introduction

According to the American Cancer Society (ACS), (2022) on January 1, 2022, there were an estimated 18 million people alive with a history of cancer. The National Cancer Institute (NCI) estimates almost another two million people will be diagnosed with cancer in 2023 (Surveillance, Epidemiology, and End Results Program (SEER), 2021). Several factors impact cancer survival, and healthcare providers play a pivotal role in empowering patients to make informed decisions, improving treatment outcomes, and enhancing overall patient experience throughout their cancer treatment. Research shows improved patient satisfaction and perceptions of care quality, improved diagnostic accuracy, and increased treatment adherence when there is effective communication between healthcare providers and their patients (McMullen et al., 2017). Likewise, patients have been shown to have reduced anxiety and stress associated with chemotherapy, leading to improved treatment compliance, quality of life, and better outcomes when they understand potential side effects and management strategies (Apor et al., 2018).

### Background

The American Cancer Society estimates that the state of Montana will reach 7,100 new cancer diagnoses in 2023 (Ahmedin et al., 2018). A cancer diagnosis has broad implications for the patient and those around them. Mann (2011) notes that no other disease state provokes such a quick and grievous response, instantly impeding a person's quality of life. Evidence supports that educational interventions tailored to the patient regarding their disease, treatment, possible side effects, and support may reduce anxiety and uncertainty. Through that education and understanding, patients acquire the requisite tools to manage adverse events, decrease anxiety and uncertainty, and improve patient satisfaction and positive outcomes (Lasa-Blandon et al., 2019; Mann, 2011).

## Local Problem

The local regional medical center has experienced a decrease in its Press Ganey patient satisfaction scores in the outpatient oncology clinic over the past two and a half years. Patient satisfaction scores were routinely rated in the 90th percentile but have now dropped into the 70th percentile. Press Ganey scores for patient experience questions regarding "Your care," "Staff's explanation of test/treatment," and "Trust in skill of staff" in quarter three and quarter four of 2022 are 85.27% and 77.12%; 78.21% and 77.59%; and 85.71% and 76.27% respectively. The clinic continues to experience significant changes with temporary oncologists, staff turnover, and system modifications such as new staffing hours and staffing mix, patient flow within the clinic, and installation of a new electronic medical record. The administration has started counterbalancing the variable effects by hiring two permanent oncology providers and seven new staff members: a Medical Assistant (MA), a Nurse Navigator (NN), and five RNs with an oncology background; and a permanent clinic director. As the clinic stabilizes its staffing, it can now focus more on correcting potential areas for improvement. Through discussions with the director and staff, it was determined that improving staff communication with patients regarding their cancer treatment infusions would be the starting point for improvement.

## Intended Improvement

The stated mission of the regional medical center is "To improve the health, wellness, and quality of life of the people and communities we serve." This quality improvement project aims to support this mission by improving patient education and communication between the patients and the cancer care team.

The proposed quality improvement project will create a separate visit for new patient education (NPE). The NPE visit will start with a comprehensive learning needs assessment, a clinic tour, education on patients' port-a-cath care and use, a review of treatment medications, expected, potential, and emergent side effects, and how and when to contact their healthcare team. The visit will occur the week before the patient's first treatment starts. The charge nurse will schedule an RN to provide education during the NPE visits as a separate assignment that does not distract or take away from direct, infusion-related patient care. The nurse will also incorporate the teach-back method developed by the Agency for Healthcare Research and Quality. This method offers a way to check patient understanding and confirm the education has been explained in a manner the patient understands (Agency for Healthcare Research and Quality, 2020). This method has been shown to improve patient understanding and treatment adherence, decrease callbacks and canceled appointments, and improve patient satisfaction and outcomes (Agency for Healthcare Research and Quality, 2020).

The proposed addition of an NPE visit will allow the patients to receive education in a calm environment with an RN available to have uninterrupted time to conduct a thorough LNA and education session. Adding this visit will allow the patient to process new and complex information before receiving their first treatment, promote communication between the healthcare team and the patient, and ultimately reduce their uncertainty with their new diagnosis.

# Methods

## Organizational Microsystem *(Setting)*

The local clinic currently serves over 2,500 patients, with approximately 62 new patients each month and an average of three new chemotherapy/immunotherapy starts each week. The clinic hosts 20 infusion chairs, provides an average of 23 infusions and 25 lab draws daily; and the average time spent on new patient education is 1.5 hours. The majority of patients are age 60 or above, and primarily speak English. The clinic staff includes nine regularly staffed RNs, seven PRN or as-needed RNs, four MAs, four Nurse Navigators, one permanent Oncologist, one NP-C, one locum tenum oncology provider, two pharmacists, three patient access specialists (PAS), and the clinic director. The daily shift schedule comprises four to five RNs, three MAs, three providers, and three PAS. The RNs are responsible for infusions, transfusions, injections, lab draws, chart prep, triage phone calls, and all patient education. The clinic operates from 0700 to 1700. Patients customarily will see the oncologist via a referral, usually from their primary care provider once a new cancer diagnosis is suspected or detected. The patient will then have a consultation with the Oncology MD.

The oncologist discusses the suspicious or confirmed diagnosis and potential treatment options and orders further testing if needed. After additional testing/staging is completed for a final diagnosis and treatment plan, the patient will return for follow-up. The patient will often have a port-a-cath placed for IV treatments and other infusions. The prior authorization request for the treatment regimen is submitted, and the patient will then be scheduled for the start of their first treatment infusion. On the day of the first treatment, the patient will have lab work completed; this is typically the first time a patient will use their newly implanted port-a-cath, for which they have received little if any education on how to prepare the port-a-cath site for the first use. The patient then goes to a private infusion room, and chemotherapy/immunotherapy education begins. Within one hour, labs will have resulted, and the patient is then taken into an exam room to see the provider one last time before treatment begins. Treatment consent is signed, and the provider answers further questions. After seeing the provider, the patient returns to their infusion room to finish their treatment education and to begin the treatment. Patients are typically very anxious and uncertain about all the events experienced during this day. Under extreme stress, individuals are expected to remember a high volume of new and complex information, which may determine their ability to manage and report their side effects and symptoms from home.

Due to the transformation of the clinic environment over the past two and a half years, staff have kept the clinic running by trying to maintain the same routines. Still, due to the many alterations in the clinic function and staffing, they are often rushed and unable to focus all their attention on one patient. Education sessions are interrupted because the nurses have multiple patients undergoing care simultaneously, and patients are not retaining important instructions on their symptoms and management of common problems during treatment. Figure 2 illustrates the current patient flow and activities before patients start their first treatment.

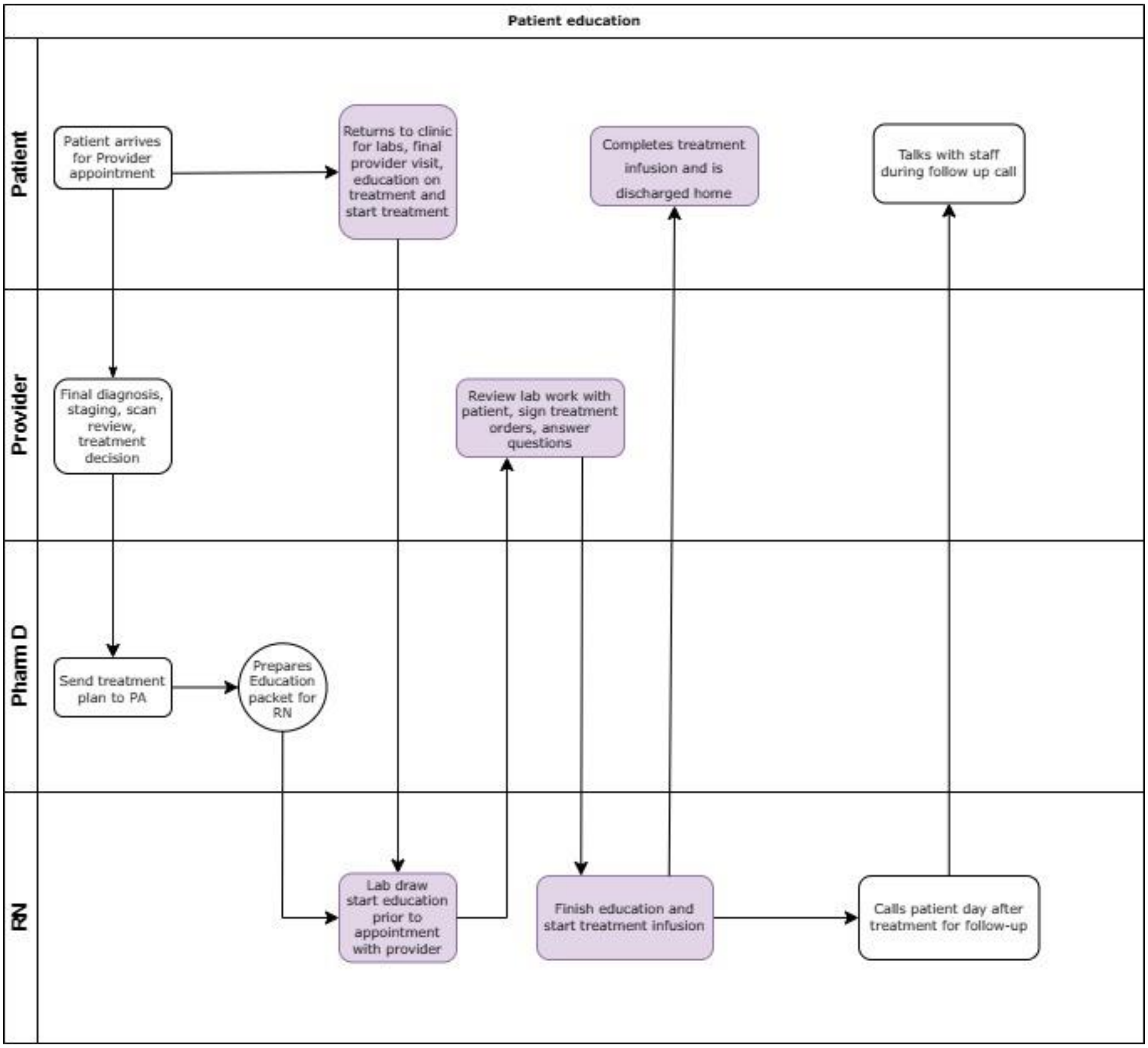

Figure 2. Swimlane: Current Patient Education Flow

## Observations and Ethical Considerations

Providing individualized care to oncology patients is necessary, but not without ethical considerations. Cost of care, inadequate conversations covering prognosis and care preferences, and failure to address end-of-life issues before there is a crisis remain common issues for providers and their patients (Peppercorn, 2013). This QI project offers increased patient and

HCP communication opening opportunities to discuss these ethical dilemmas. Additionally, this patient population may also have an altered mental status due to pain or narcotic medication used for pain control. They may be unable to fully understand the instructions or follow directions in their current mental state. If a patient is displaying unreasonable or bizarre behavior, altered thought processes, or whose memory is not intact they will be unable to give proper consent or understand the education. In that case, we may need to postpone the appointment and provide education at a more convenient time for the patient when they can participate and understand the information. Alternatively, educating a family member with power of attorney may be necessary before starting treatment.

Part of the data collected will include the patient's age. Grouping the data will prevent identification. The age groups will be 18-30, 31-50, 51-70, and 71 and up. Before providing education, RNs will review consent with the patients regarding taking the QI survey at the end of the NPE session. Not filling out a survey will not influence a patient's care, and patients will be provided with project details before they receive their education.

## Quality Improvement Framework

The Plan Do Study Act (PDSA) quality improvement model guides the implementation of this project. The PDSA incorporates rapidly repeating cycles of examining and correcting a problem. On a small scale, this method institutes an improvement idea, observes the effects, modifies the idea as needed, and then repeats the cycle until there is assurance in the value of the change (Polit and Beck, 2022). This project has a short implementation time frame. Using the PDSA model allows quick intervention and evaluation with the refinement of the interventions based on the analysis followed by repeated cycles of studying the interventions and analysis, if necessary, to determine the best intervention to support the desired outcome. The model supports deliberate and thorough testing within this environment (Melnyk and Fineout-Overholt, 2019).

### Uncertainty in Illness

The theoretical framework Uncertainty In Illness by Merle H. Mishel purports how patients construct meaning in illness events by how they make sense of illness-related stimuli. Mishel defines uncertainty as “the inability to determine the meaning of illness-related events” and the inability to predict the outcome of their health related to the diagnosis or illness-related event (Mishel, 1988). The coping methods or the ability of patients to adapt to their illness aim to reduce or maintain uncertainty. Appraisal of their illness-related stimuli (i.e., cancer diagnosis), occurs when patients define the illness as a danger (threat) or an opportunity (challenge). Mobilizing strategies such as information seeking, direct action, or maintaining vigilance; and/or affect-control strategies such as emotionally disengaging, faith, or emotional support are used when the illness is appraised as a danger (Zhang, 2017). Buffering strategies such as avoidance, reframing the situation, or ignoring are used when threats are appraised as an opportunity (Zhang, 2017). Neither coping method is better than the other. Instead, each coping method requires adaptation or tools to help patients use cognitive and emotional strategies to address their uncertainty and improve their quality of life. This project will address the uncertainty experienced by undergoing chemotherapy and immunotherapy for the first time by providing structured and comprehensive information to patients and their families. They will better understand their illness, treatment, side effects, self-care strategies, and the importance of adhering to treatment regimens. Additionally, education sessions provide ongoing communication between the healthcare team and the patient, creating trust and confidence in their healthcare providers. The proposed changes for the quality improvement project will address the antecedents of uncertainty within the stimuli frame (symptom pattern and event familiarity) and the stimuli frame influencing variable structure providers (credible authority and education).

## Implementation

Various contributing reasons have been described for the low Press Ganey patient satisfaction scores. Evidence shows that reducing anxiety and uncertainty improves patient satisfaction with their care and outcomes. An augmented workflow process will allow patients to absorb the vast amount of information given to them during their appointments, familiarize themselves with the clinic environment and services, and provide the patients and their families/friends time to ask questions and clarify complicated treatment regimens and supportive care. Figure 3 illustrates the proposed change to the patient flow based on site observation sessions and stakeholder feedback.

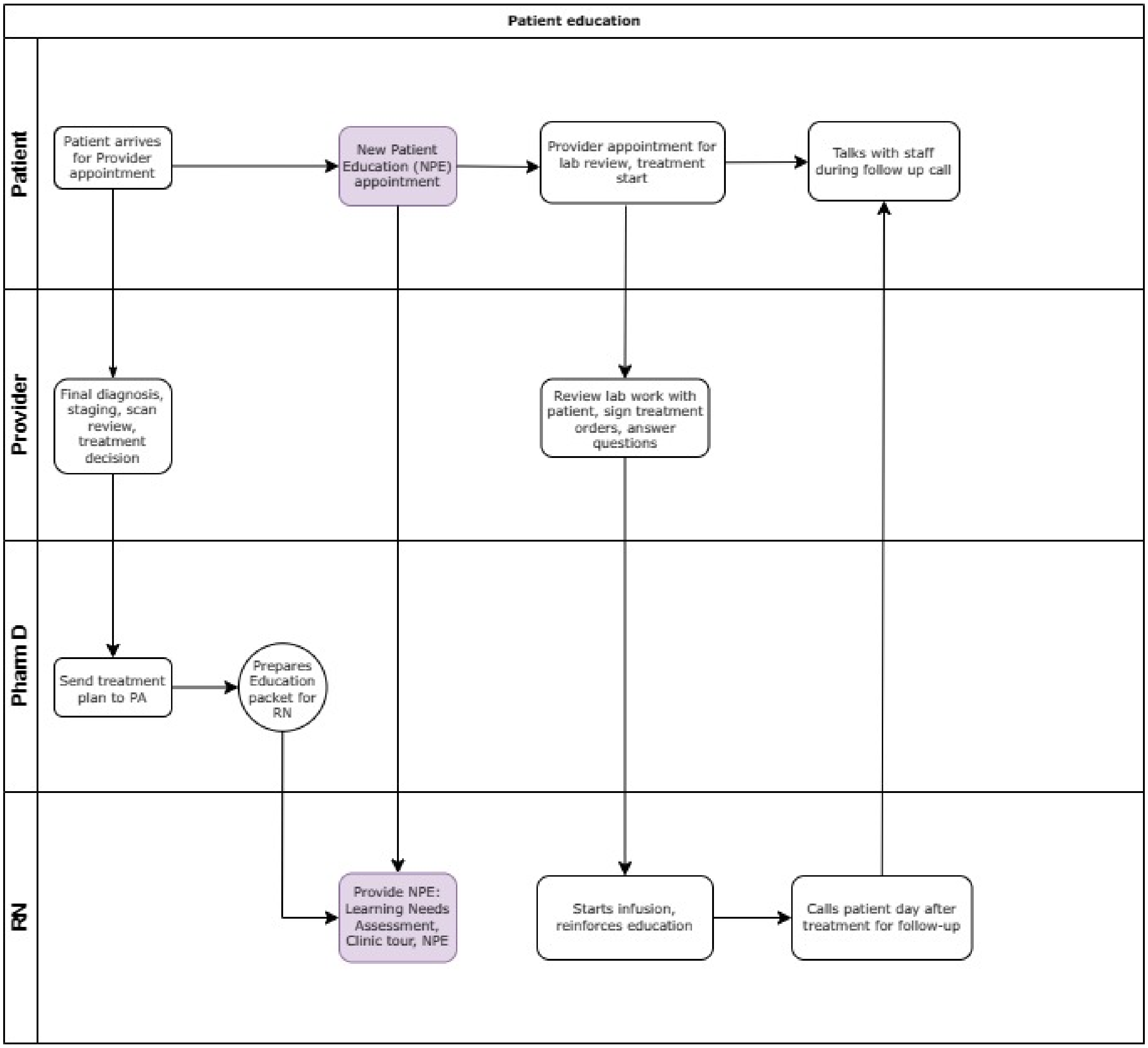

Figure 3. Swimlane: Proposed Patient Education Flow

Each section of the PDSA cycle is proposed as follows:

1) Plan: After confirmation of the patients' staging and treatment regimen, patients will receive a new patient education (NPE) appointment the week before the start of their treatment. The appointments will occur from 1400-1630 on Wednesday, Thursday, and Friday. One "B" shift (0830am-1630pm) nurse will be assigned to provide the NPE. PAS will give the patients a learning needs assessment (LNA) handout, see Appendix A, and

request that they complete the form and bring it to the NPE appointment. The RN providing the education will use this information to tailor the education elements further to meet the patient's specific learning and supportive care needs. The appointment will last an hour and fifteen minutes, take place in a quiet section of the clinic, and include a physical tour of the clinic; port-a-cath instructions and demonstration of EMLA cream application; comprehensive education on all expected side effects and evidence-based self-care management strategies to use at home specific to the patient's treatment regimen; and when and how to contact the clinic and providers during clinic hours and after hours. The PharmD compiles the education topics and information provided to the patient from Intravenous Cancer Treatment Education (IVE) at ivcanceredsheets.com, which offers information in patient-friendly terms. The information from IVE comes from collaboration with the Oncology Nursing Society (ONS), Hematology/Oncology Pharmacy Association (HOPA), National Community Oncology Dispensing Association (NCODA), and Association of Community Cancer Centers (ACCC). A National Comprehensive Cancer Network (NCCN) handout reinforces immunotherapy-specific toxicities. Furthermore, the PharmD includes a hospital-specific handout with phone numbers and common treatments for home care management of common side effects. Additional information supplied in a binder for the patient to take home includes evidence-based websites for patients, a calendar to keep track of appointments, and phone numbers with their NN, social worker, and dietician.

RNs will document the LNA and NPE topics in EPIC per Quality Oncology Practice Initiatives (QOPI) guidelines. The RNs will use the teach-back method to deliver and assess the patient's understanding of the information provided during the appointment.

2) Do: The project lead will instruct providers on how to notify PAS to schedule the NPE visit and train PAS on when to schedule the appointment in EPIC. The instruction will include informing the patient on completing the LNA handout. The project lead will also educate the RNs on the new NPE visit process and why and how to use the teach-back method when providing NPE. Review of EPIC charting for the LNA and NPE completes their education. The RNs will receive their education during two weekly staff meetings before the QI implementation. Once staff training is completed, the NPE visits will commence.
3) Study: At the end of the NPE visit, the patient will complete a five-question survey regarding the visit. The survey, see Appendix B, consists of qualitative descriptive questions about their education experience. At the end of each education day, the RNs who provide the NPE will complete a seven-question survey, see Appendix C; and the project lead will request the providers and PAS to provide verbal mini-feedback. Data analysis will occur on Friday after every two-week iteration after implementation. Discussion with the site representatives will occur on the following Monday to discuss the survey results and decide on any modification to the plan for the next two-week iteration. Any modifications will be communicated via a group email to the RNs completing the NPE visits. The cycles will continue for six weeks and then monthly after that and will include analysis of post-intervention and staff surveys. The hospital

financial office will provide the monthly Press Ganey scores at the end of each month for evaluation.

4) Act: Continuous evaluation of patient and staff feedback at two-week intervals will determine if changes should ensue to the implementation plan. Adjustments are made based on the feedback and surveys to capture the short and medium-term goals of the QI project for staff and patients receiving treatment for the first time.

## Evaluation

Tailoring education to the oncology patient receiving their first treatment infusion provides patients with the first step to feeling less uncertain regarding their diagnosis, treatment, and self-care strategies. Employing a qualitative approach to gather knowledge on the effectiveness and value of treatment education is particularly pertinent in nursing practice. Upon completing the NPE visit, patients will be asked to complete a five-question qualitative patient survey of their experience. The project lead developed the survey to gain insight into the education topics most valued by patients and topics that may require more explanation or information. It also aims to provide a perspective from the patient's lens that may have been overlooked when compiling the NPE improvement. The survey questions also assess whether the education contributed to reducing uncertainty with self-management of treatment side effects and the relationship with their healthcare team.

Additionally, the nursing staff will complete a seven-question qualitative survey informing on the staff's perspective of implementation, providing insight into the aspects that were helpful or ineffective, and if the improvement is feasible in the long term. The qualitative findings reveal opportunities to improve the standard of care outlined in Domain 2: Treatment

Planning, Patient Consent, and Education of the QOPI guidelines, validate the changes in the new education process, and improve how nurses think about providing care.

All survey forms will be anonymous. Completed forms will be placed in a project folder and stored in a locked medication room drawer. The survey information will be de-identified and compiled onto an Excel spreadsheet and stored on the MSU One drive. Hard copies will be kept at the clinic in the locked medication room. The collected information will be organized by question and separated by literature-informed categories. Clinical significance will be determined if the NPE visit provides information that helps patients feel less uncertain about their cancer diagnosis and treatment and nurses assess patient needs and tailor the education appropriately.

The data collected will be the patient and staff surveys. In addition to the surveys, the project lead will collect the number of LNA and NPE visits charted in the EMR, and the total number of new patient treatments completed. After conducting data analysis from the surveys and calculations of LNA and NPE visits, the project lead and staff will discuss any needed changes and obstacles encountered to adjust the plan before the next iteration of the PDSA cycle. Data analysis will occur every two weeks for six weeks or less if we achieve our short and medium-term goals sooner. Press Ganey scores compiled by the hospital administration, requested by the project lead, will be evaluated monthly to ascertain if the NPE visit impacts the three questions regarding the patient experience section within "Your Care" of the Press Ganey survey.

## Goals

Table 1. Short-term Goals

| **SMART GOAL #1:** Between January 15 and March 1, 90% of patients receiving chemotherapy/immunotherapy for the first time will be scheduled for and will complete an NPE visit prior to the first treatment infusion. | | |
|---|---|---|
| • Successful defense and IRB approval complete by December 2023.<br>• Team of stakeholders and staff will agree on process flow for education appointment, LNA, education content, and documentation of LNA and NPE by December 2023.<br>• Project lead will train providers to indicate an NPE visit is to be scheduled by the team of PAS.<br>• Project lead will train PAS when to schedule the NPE visit on Wednesday, Thursday, or Friday, 1400-1630 time slot on the education schedule and provide the patient with the LNA handout and instruct them to fill out and bring to the NPE visit.<br>• Train staff who are involved in the NPE process on how to use the teach-back method for providing NPE and how to document LNA and NPE in EPIC by January 15, 2024. | | |
| **Data to be collected** | **Method of Collection and who is responsible** | **Planned data analysis** |
| # of new patients who are scheduled for NPE: demographic data: gender, age, diagnosis, and # new patients starting treatment | Data will be obtained by project lead from the EMR and organized into an Excel spreadsheet, stored on the MSU One drive. | Descriptive statistics |

Table 2. Medium-term Goals

| **SMART GOAL #1**: Nurses are more acutely aware of assessing patient education needs and tailoring NPE to those needs. | | |
|---|---|---|
| • Team of stakeholders: site representative, project lead, will develop LNA tool and plan for documentation in EPIC.<br>• Project lead will work with IT department to build dot phrase for charting LNA in EPIC.<br>• The LNA handout will be filled out by the patient before the NPE appointment.<br>• RNs will use the LNA tool to tailor education to the patient. | | |
| **Data to be collected** | **Method of Collection and who is responsible** | **Planned data analysis** |
| LNA completed<br>Staff survey | EMR data | Descriptive statistics |

| | | |
|---|---|---|
| | Project lead to collect completed Staff Survey form Q2W. | Qualitative content analysis |

**SMART GOAL #2:** Staff satisfied with new patient education process.

- Project lead will conduct staff education sessions on NPE visit format, teach-back method, charting in EPIC, dates TBD.
- Patient education tools: LNA form, port-a-cath handout, chemotherapy/immunotherapy education sheets, at-home medication instruction handout, and checklist will be updated and reviewed by project lead, pharm D, site representative, and nursing.
- Project lead will review charting for LNA and NPE visits in EPIC with nursing staff.
- Funding for RN staffing of NPE visits and printing of handouts is in the current operational budget. No additional funds are necessary.

| **Data to be collected** | **Method of Collection and who is responsible** | **Planned data analysis** |
|---|---|---|
| Staff surveys | Project lead to collect surveys Q2W. | Qualitative content analysis |

**SMART GOAL #3:** Patients communicate less anxiety and less uncertainty before starting their first treatment.

- Nursing will conduct NPE visits the week prior to the first treatment.
- LNA completed by patient prior to start of NPE visit.
- NPE visit will include tour of clinic, port-a-cath education, side-effect education, self-care management at home, and contact information.
- The teach-back method will be used to determine patient understanding of education during the NPE visit.

| **Data to be collected** | **Method of Collection and who is responsible** | **Planned data analysis** |
|---|---|---|
| Patient survey | RN to request survey form completed at the end of each NPE visit from the patient. Completed forms will be stored in locked med room drawer. Project lead will input deidentified data into Excel spreadsheet weekly. | Qualitative content analysis |

Table 3. Long-term Goals

<table>
<tr><td colspan="3"><b>SMART GOAL #1:</b> 20% increase in Press Ganey patient satisfaction scores within one year of NPE implementation.</td></tr>
<tr><td colspan="3">• <b>Project lead to obtain Press Ganey scores from administration.</b></td></tr>
<tr><th>Data to be collected</th><th>Method of Collection and who is responsible</th><th>Planned data analysis</th></tr>
<tr><td>Press Ganey reports</td><td>Hospital reports provided to project lead and site representative monthly.</td><td>Pre and post evaluation of 3 "Your Care" Press Ganey scores</td></tr>
</table>

<table>
<tr><td colspan="3"><b>SMART GOAL #2:</b> Development of NPE policy within one year of NPE implementation.</td></tr>
<tr><td colspan="3">• <b>Nurse educator or clinic director will develop NPE policy based on quality improvement project that incorporates this QI project as part of new hire orientation.</b></td></tr>
<tr><th>Data to be collected</th><th>Method of Collection and who is responsible</th><th>Planned data analysis</th></tr>
<tr><td>NPE policy completed</td><td>CTC director/nurse educator</td><td>Does clinic director agree to create policy and is it done: yes or no?</td></tr>
</table>

# CHAPTER THREE

# QUALITY IMPROVEMENT MANUSCRIPT

## Introduction

In 2024, new cancer diagnoses are expected to reach over two million cases, which equates to nearly 5,500 cancer diagnoses per day (Collins, 2024). Despite the significant number of new cancer diagnoses, overall cancer death rates are on the decline. For the patients themselves, the overwhelming technical and specialized information regarding their diagnosis and treatment correlates with significant emotional distress (Apor et al., 2017; Mueller and Glennon, 2007). Uncertainty in illness refers to the lack of clarity or understanding of a person's condition and may impact a patient's ability to make decisions regarding treatment and prognosis. Research shows illness uncertainty may negatively impact quality of life (QOL) and increase anxiety and depression, leading to patients who are less able to perform self-care activities and manage common chemotherapy/immunotherapy side effects (Garcia, 2014; Guan et al., 2020).

### Background

The rising incidence of cancer diagnoses, combined with declining patient mortality rates, results in greater numbers of people confronting cancer as a progressive condition and enduring the physical and emotional side effects of the disease and its treatments. Without proper patient education on what to expect and how to manage side effects or clinical experiences, patients are left to envision worst-case scenarios, seek unnecessary high-acuity care, or misinterpret and ignore body cues. These experiences can lead to decreased QOL and potentially poor treatment outcomes. Providing appropriate and timely education is shown to reduce anxiety, worry, and fear of the unknown. This knowledge gives patients a sense of control with proper self-management tools for treatment side effects and an understanding of when to reach out to the healthcare team for help (Apor et al., 2018; Jabaley et al., 2020).

## Available Knowledge

The literature supports four areas where oncology patient education may be refined. Identifying patient learning needs and preferences assists patients in retaining information and improving comprehension (Lehmann et al., 2020; Mann, 2011). Providing patient education before the first day of treatment is set to begin is shown to decrease anxiety and increase satisfaction (Garcia, 2014; Mann, 2011). Standardizing education topics provides consistent, organized delivery of side effect management, contact information, and understanding expectations during chemotherapy/immunotherapy treatments (Apor et al., 2018; Dalby et al., 2013; Portz and Johnston, 2014). Assessing comprehension during education sessions confirms the patient's understanding, offers opportunities for reeducation if necessary, and improves communication between the healthcare team and the patient (McMullen et al., 2017; Valenti, 2014). The enhanced education visit was created using this knowledge to add value within these areas for the patients and the healthcare team while meeting the current practice guidelines from the Quality Oncology Practice Initiative (QOPI).

## Local Problem

Patient satisfaction scores in the outpatient oncology clinic of a rural regional medical center over the past two and a half years have decreased considerably in patient experience questions regarding "Your care," "Staff's explanation of test/treatment," and "Trust in skill of staff." " In quarter three and quarter four of 2022, the scores dropped from 85.27% to 77.12%, 78.21% to 77.59%, and 85.71% to 76.27%, respectively. The clinic experienced significant changes and instability throughout this period, with the loss of its sole oncologist, followed by extensive staff turnover. Most of the staff who left were experienced oncology-certified nurses and also included the clinic director, multiple patient access schedulers (PAS), and Medical Assistant's (MA). The clinic has had multiple locum tenum providers and temporary clinic directors to fill in while searching for permanent replacements. The clinic has hired two permanent providers, five RNs, a Nurse Navigator, and two MAs and is in process to hire a new director. To improve patient satisfaction scores, site stakeholders and the project lead decided to create a robust patient education experience to enhance communication between themselves and the patients. This quality improvement (QI) project focused on creating a new patient education visit that provided education tailored to the patient's needs, met QOPI guidelines and assessed for comprehension of the education provided. Thus, this QI project aimed to enhance patient understanding and treatment adherence, decrease uncertainty about cancer treatment and side effects, and improve patient satisfaction and QOL.

## Uncertainty in Illness

Merle H. Mishel's theoretical framework, Uncertainty in Illness (UIT), guided the conceptual approach to select intervention strategies implemented in this project. The theory describes how a patient derives meaning and makes sense of illness-related events (Mishel, 1988). Uncertainty ensues if the patient cannot interpret or process the illness-related events. The antecedents of uncertainty include the stimuli frame comprising symptom pattern, event familiarity, and event congruency; cognitive capacity; and structure providers, which include credible authority, social support, and education (Mishel, 1988). This project focused directly on the antecedents, credible authority, and education by providing consistent information from healthcare providers and regimen-specific information on treatment, expected, and self-management of side effects. The project also addressed the antecedents' symptom pattern and event familiarity by providing an orientation to the clinic environment and routine and explaining how and when to contact their healthcare team. By addressing these antecedents of uncertainty, patients can better interpret and accurately predict their experiences, reducing uncertainty (Zhang, 2017). By reducing uncertainty, evidence suggests improvement in quality of life, reduced stress, and improved outcomes (Mishel, 1988)

### Teach-Back Method

The staff implemented the teach-back method to assess comprehension of the education provided during the education visit. This method provides opportunities during the session to evaluate the patient's understanding of important topics and offers reeducation, if necessary, thus reducing confusion or misunderstanding by the patient (Scott et al., 2019). This evidence-based method favors patients' and caregivers' direct participation in the learning process (Jabaley et al., 2020; Scott et al., 2019).

### Intended Improvement

The culmination of changes within the clinic, including staffing mix, staffing hours, provider expectations, leadership direction, and EMR addition, created a patient care gap with rushed and distracted patient education sessions. Staff recognized a need to change the education strategy with an increased focus on delivering education to new patients receiving chemotherapy and immunotherapy. The primary goal was to increase chemotherapy/immunotherapy education retention and decrease patient anxiety and uncertainty before starting treatment in a manner that is feasible for the nursing staff. The secondary goal was to increase patient satisfaction with their care in the oncology clinic.

Patients scheduled a new patient education (NPE) appointment the week before the start of chemotherapy/immunotherapy. During the education visit, the patient completed a learning needs assessment, toured the clinic, and received education on care and maintenance of their port-a-cath, patient regimen-specific schedule, and common side effect self-management strategies. Nurses provided the information using the teach-back method to determine retention and understanding of the provided information. These elements were chosen for several reasons: 1) they addressed the antecedents to uncertainty, stimuli frame (symptom pattern and event familiarity), and structure providers (information from healthcare providers and education) in the uncertainty in illness theory, 2) they provided a technique to assess patient retention and comprehension of the information provided, and 3) they met ASCO Quality Oncology Practice Initiative Certification Program (QOPI) guidelines for certification within Domain 2: Treatment Planning, Patient Consent, and Education.

## Methods

### Organizational Microsystem

The oncology clinic is part of a rural, regional medical center and serves over 2,500 patients. They see approximately 62 new patients monthly, averaging three new chemotherapy/immunotherapy starts weekly. The clinic averages 23 infusions, and 25 lab draws daily. Currently, nurses spend about 1.5 hrs. on new patient education on the same day as the start of the patient's first treatment, and nurses have multiple patients undergoing care simultaneously. Most patients treated are 60 years or older and primarily English-speaking. The clinic comprises nine FTE RNs, seven PRN RNs, four MAs, three Nurse Navigators, two Hematology-oncologists, one Oncology NP-C, two pharmacists, three patient access specialists, and a clinic director. A fully staffed daily shift includes five RNs, three MAs, three providers, and three PAS. Operating clinic hours are from 0700- 1700. RN responsibilities include infusions, transfusions, injections, lab draws, IV starts, chart prep, triage phone calls, and patient education.

## Intervention

The design of the new patient education visit came about through an iterative process based on the best evidence from the literature, observation of the clinic processes, and previous experience guided by the Uncertainty in Illness theory. Before implementing the intervention, nursing personnel received instruction covering the components of the new patient education visit and deploying the teach-back method. The implementation of the NPE visit included the following elements: an education appointment request order from the provider for all new patients starting IV chemotherapy/immunotherapy and an education visit scheduled within one week of IV treatment. During the NPE visit, a learning needs assessment was completed by the patient, followed by an RN providing a tour of the clinic, and ending with education and demonstration of port-a-cath care, use and maintenance, patient-specific chemotherapy/immunotherapy education, side effect self-management, emergent situations, and contact information. Concluding the NPE visit, the patient and the RN providing the NPE filled out a qualitative survey; the RN also charted the LNA and education provided during the visit in the EMR and submitted the billing charge for the nurse education visit.

## Study of the Interventions

The continual evaluation of this quality improvement project occurred through the Plan Do Study Act, known as the Demming cycle, model with rapidly repeating cycles of examining and adapting an intervention to support optimal system function. On a small scale, this method institutes an improvement idea, observes the effects, modifies the idea as needed, and then repeats the cycle until there is assurance in the value of the change (Polit and Beck, 2022). The implementation occurred over six weeks, consisting of three two-week PDSA cycles, and concluded when the faculty advisor and project lead confirmed data saturation.

The patient and RN completed a qualitative survey after each education visit during the six-week process to measure patient and RN perceptions of the intervention on satisfaction, ease of use, education content, and ability to provide self-care side effect management. The patient survey included demographic data, diagnosis, and open feedback to measure their perception of treatment, value of the education, comfort managing symptoms at home, and improvement suggestions for the visit. The RN survey included OCN certification, years as an RN, years worked in the clinic, and open-ended questions assessing the NPE format, topics, and delivery; they also evaluated their use of the teach-back method. The project lead obtained verbal feedback from the providers, NN, and PAS to ensure ease of flow with ordering and scheduling. A period of observation by the project lead was integrated into each cycle to examine the entire process and workflow of ordering and scheduling the NPE. The observation findings then informed the feasibility of the adaptation to include the teach-back method as a standard approach for the NPE.

## Ethical Considerations

The project lead submitted this quality improvement project to the Montana State University Institutional Review Board (IRB) for acknowledgment and deemed the project did not meet the definition of human subjects research under federal regulations (45 CFR 46). Other ethical considerations of the patient population involved in this project surrounded altered mental status due to pain or narcotic medication used for pain control. In such instances, the patient would be unable to fully understand the instructions or follow directions in their current mental state. Nurses were instructed that if patients displayed unreasonable or bizarre behavior, altered thought processes, or memory was not intact, they would be unable to give proper consent or understand the education. In those cases, appointments were to be postponed, and education appointments were to be rescheduled at a more convenient time for the patient when they would be able to participate and understand the information. Alternatively, the nurses had the choice to educate a family member or caregiver with power of attorney, if that option was available, before starting treatment.

The remaining ethical considerations involved data collection. Before providing education, RNs reviewed consent with the patients regarding completing the QI survey at the end of the NPE session. Survey completion did not influence patient care, and the nurses provided the patients with project details before they received their education. Additionally, part of the data collected included the patient's age. Grouping the data prevented patient identification. The age groupings comprised 18-30, 31-50, 51-70, and 71 and up.

## Results

### PDSA Cycle 1

The first cycle included eight participants. Initial feedback from the providers during the first week of implementation proved encouraging. The providers could easily order the education visit, and the patients who had received the NPE verbalized their satisfaction with the session to an MD and the NP. The comment relayed to the project lead from the provider, *"My patient told me they really liked the education appointment and felt well prepared for treatment."* Based on observation during the first week, it became apparent that the initial plan to schedule the appointments only three days a week, Wednesday, Thursday, and Friday, would not offer enough availability for patients. Increased flexibility in the system proved necessary due to the high variability of new patients starting treatment. At the end of the first cycle, the education appointment availability increased to Monday through Friday, at 1400-1515 and 1530-1645. Unexpectedly, the director was let go during this first cycle. The administrator provided loose directions for the clinic operations, and this author proceeded to coordinate further decision-making with the charge nurses and the pharmacist due to their role in providing direction with daily functions within the clinic. The front staff needed reinforcement to hand out the LNA form to the patient when they checked in for their appointment. Charting the LNA, education, and billing code were reviewed with the RNs.

### PDSA Cycle 2

Nine patients received education during the second cycle, but two refused to complete the survey. The biggest challenge during this cycle proved to be ordering the NPE visit with the provider, often forgetting to place the order. After consultation with the charge nurses and pharmacist, it was determined that the pharmacist would double-check that the provider placed the education order when the new treatment orders came to her. If the education visit did not get ordered, the pharmacist directed the charge nurse to enter the order into the system. No other changes were made to the visit. The project lead reinforced with the RNs to chart the LNA, education, and bill for the visit.

### PDSA Cycle 3

In the third cycle, only two education visits were completed, with one patient refusing to complete the survey. One provider was on vacation, and one provider was sick, which contributed to fewer new starts. However, the scheduling of future education appointments continued, and the flow of ordering and scheduling appeared to move fluidly, with the pharmacist double-checking the education visit order. Upon evaluation of the survey data with the faculty advisor, data saturation was felt to have been reached and the data collection period ended after the third cycle.

### Descriptive

Descriptive statistics for sample examination were conducted using Excel functions and validated through an online statistics calculator. Nineteen patients received the enhanced education appointment, and seventeen consented to complete the survey. The mean age group of participants was between 51 and 70. Twelve patients were diagnosed with a solid tumor and four were diagnosed with a heme disorder/cancer. Three patients were metastatic at diagnosis. 56% (n=16) of the respondents were male, 44% were female. When questioned on the goal of treatment, 62.5% (n=16) of the patients' goal was curative, and 25% were starting treatment for palliation or symptom management. Separately, 12.5% shared a QOL perspective for treatment goals, defined as non-curative intent but supporting meaningful activities as part of the disease process.

Nurses' experience in total years ranged from 2 years to 39 years (SD=13.60), with an average of 16.56 years. Four RNs are oncology certified (OCN), and five are without certification. Employment within the outpatient clinic ranged from three months to 10 years, with the median number of years worked in the clinic being 1.5 years (average 3.2 years).

### Qualitative

When patients were surveyed on the most valuable part of the education provided, responses could be separated into two categories: logistics of treatment (process of care) and anticipated side effects and actions (expectations). Outside of these two categories, other findings emerged, such as the value of knowledge and education and how this can affect *"everything* [01C3]*"* as it pertains to their management of the disease process. All the respondents had more confidence in managing the expected symptoms and side effects at home, with one patient noting, *"I know things that would have been scary to find out on bad terms* [02C7]*"* and *"very thorough explanation of what could happen and how to manage* [02C3]*"* the side effects. The majority (94%, n=16) of the respondents found the delivery of the educational content satisfactory and had no suggestions for improvement. Two respondents each found the information to be very good, but one felt it would require a review of the handouts and binder again at home, and the other stated, *"I just need more time to understand everything wrong with me* [02C7]". Communication between the patient and their healthcare team was viewed very positively overall, and several noted that using electronic communication was beneficial in keeping them informed and on track. Another reported they needed the information delivered slower since they were still processing their diagnosis and *"upset about everything at this time."*

In 17 instances, 100% of the RNs felt that the NPE visit provided consistent, standardized education. Most followed the original format. One RN preferred to give the clinic tour at the end of the education visit instead of at the beginning as a personal preference. The two other deviations occurred if the education occurred when the patient was an "add-on" and more time was not allowed due to poor provider communication of the expected start day and when the patient was overwhelmed with their diagnosis. They were unable or unwilling to learn about their treatment and side effects. Few suggestions were made when queried about changes they would like to make to the NPE, except for adding educational content on using the patient portal, MyChart, into the session. The nurses felt the NPE visit was the same (12%, n=17 instances) or improved (88%, n=17 instances) from the previous system, with comments such as:

*"Much more time to chat with patient uninterrupted.* [01C1]*"*

*"Allows me more time with the patient in unrushed format.* [01C6]*"*

*"Gives the patient time to go home, look at things, and discuss prior to coming back for treatment.* [02C2]*"*

*"Much more relaxed environment.* [02C5]*"*

The nurses used the teach-back method 88% (n=17 instances) of the time and modified the method due to patient preference and anxiety. As one nurse noted, *"Patient said she preferred to listen and have written notes to take home and became more anxious when asked to do teach back* [01C2]," while another nurse mentioned, *"This couple was so in shock about his diagnosis that they weren't really interested in hearing about the chemo meds. I touched on the* *basics, but he had more questions about the port and port surgery* [02C9].*"* The biggest challenge the nurses indicated in using the teach-back method was their lack of comfort in using a new teaching technique. However, the majority of nurses believed it to be helpful, with insights such as: *"Worked great. We reviewed what she couldn't remember* [01C1]*"*, *"Could see how much the patient was following* [03C2]*"*, and *"Confirming that the patient understood the education topics* [02C4].*"*

Additionally, the feedback from the providers and nurse navigators regarding the education was overwhelmingly positive. *"My patient was very happy with the education she received. She said she felt better about starting treatment and more confident in managing the side effects."* And another*, "The information allowed me to prepare for the start of treatment well in advance, picking up my medication and buying some of the suggested drinks and food. They answered all my worries."*

## Discussion

Although uncertainty is present throughout the cancer continuum, this project addressed the uncertainty experienced at diagnosis and the start of new treatments. This setting allows the healthcare team to establish trust and confidence with the patient. It initiates education to reduce anxiety by offering familiarity and tools to manage the next phase of the cancer trajectory, intending to alter the overall outcome in a positive direction.

This QI project demonstrates The Uncertainty in Illness theoretical framework is valid to examine the significance of education method in application for this population. A couple of the patients were very angry with their new diagnosis and were using buffering strategies such as avoidance, to hinder the incoming information. They didn't want to discuss the potential side effects or learn about their treatment. They had no questions and refused to complete a survey after the appointment. In these instances, the patient prefers the uncertainty surrounding their prognosis to knowing they might have a poor prognosis. They are disengaged, meaning they use an avoidant strategy to ignore the facts and distract them from the problem. This results in maintaining uncertainty and possibly preserving hope. In these cases, the nurses keyed into the patients' appraisal. They connected the patient to other resources, i.e. social work, and adapted the education provided during the session to the salient points and the topics the patient requested, ie. Port-a-cath concerns. More patients appraised their cancer diagnosis as a threat and used active strategies to reduce their uncertainty by seeking information, emotional support, and planning for future events. In these instances, patients were engaged in the education sessions, asked many questions, and took steps to prepare for their upcoming infusion.

The project utilized a framework for providing chemotherapy/immunotherapy education and support within an outpatient setting. Comparison of results and findings from the quality improvement intervention echoes previous results in the literature. The intervention encompassed the current chemotherapy administration safety standards for educating patients starting chemotherapy/immunotherapy in conjunction with a personalized approach to the patient's needs, offered before the start of treatment. By recognizing patient goals and priorities through the learning needs assessment, the nurse and healthcare team could direct additional resources as needed and focus on the concerns of the patient and caregivers. Understanding your patients' needs before providing education improves patient satisfaction and ensures a more positive experience (Mann, 2011).

Providing education before beginning treatment allowed patients time to review the material presented during the session and prepare for the upcoming therapy by picking up prescriptions and over-the-counter medications before symptoms and side effects began. The session also gave the patient more clarity on what to expect during their time in the clinic and familiarization with the environment and routine during their visits. The nurses were also more satisfied with providing education on a separate visit from the start of treatment. They appreciated having one-on-one, uninterrupted time with their patients, allowing them to explain and review the education material thoroughly.

The topics covered during the NPE increased patient confidence in their ability to manage their symptoms at home and when to call their provider. The knowledge helped to give patients agency to lessen their anxiety and maintain some control, as well as improve communication and feel confident with their healthcare team. The nurses believed it was important that all patients receive the same information for managing side effects, particularly how and when to take medications at home. The standardized format also helped to ensure the patient received all the information about their treatment regimen.

The teach-back method was initially challenging for the nurses since it was a new and unfamiliar technique. However, most nurses reported that the method was useful and allowed them to assess and confirm that the patient understood the education. Likewise, the technique caused some nurses to reflect on their teaching. It allowed them to alter their style by reviewing the education slowly or recognizing when the patient needed a different approach. This finding is similar to the study by Scott el. al. (2019) evaluating the teach-back method to improve discharge instructions in an inpatient oncology unit. By responding to the concerns and anxiety the patient was feeling and addressing the cause by altering the topics to meet the patient's needs, the method allowed the patient to reflect and process the ideas discussed.

## Limitations

This QI is a pilot project and may not be generalizable to other settings. This project was conducted at a single site with a non-randomized sample of patients in a rural outpatient oncology clinic. The sample was generally homogeneous, being primarily Caucasian, and most participants were 51 years of age and older. The time frame was limited to six weeks, which did not allow the site to determine if the patients' education led to fewer admissions, ER visits, and better outcomes. The feasibility of the intervention may best apply to settings with full staffing that allow for extended one-on-one interactions with patients.

## Implications and Future Recommendations

Given the short period of this implementation, it is necessary to determine whether the process continues to flow smoothly, from ordering the education visit to scheduling the appointment. Determining continued sustainability with time, staffing mix constraints, and charting will also be essential. Attempts were made to capture the Press Ganey scores; however, internal obstacles prohibited the data from being retrieved. There was incomplete data surrounding the billing characteristics and procedures regarding nurse visits; however, it was indicated that the reimbursement, on average, was $13.95. The reimbursement trends require additional longitudinal review and were recommended to the clinic for future consideration. Further billing and coding tracking will help determine the financial impact the education appointment offers.

Future QI projects may explore the practicality of group education sessions to educate patients. Group education sessions may be more cost-effective for settings with limited staffing and resources. Broadening the use of an education visit for more than new patient education may offer opportunities to enhance patient satisfaction with their care further. Education sessions can include patients transitioning to new regimens due to disease reoccurrence or progression. Also, adding patients scheduled to undergo interventional radiology procedures, such as inserting PleurX catheter drain tubes and G/J tubes for nutrition, should be considered. These patients do not receive education on the care or maintenance of their new catheters before leaving the hospital, leaving them scared and uncertain. Finally, the clinic should consider including education on survivorship care to address uncertainty at the end of treatment, provided during an educational visit to tackle the uncertainty of "now what" once treatment ends.

## Conclusion

The results of this project showed that the participants were more confident with their ability to self-manage symptoms and understood when to call the healthcare team for symptoms not controlled with home medications or in an emergency. Nurses were more satisfied with providing education on a separate visit than on the day of the patient's first treatment. The teach-back method and appointment timing enabled patients to understand multifaceted and nuanced health information better. The one-on-one sessions allowed nurses to self-reflect on their education style and learn from patients' nonverbal behavior, allowing them to alter their approach to education by moderating their discussion or changing the focus of the education under discussion. Addressing the antecedents of uncertainty within the structure providers and stimuli frame allowed patients to better predict and prepare for their experiences with appropriate tools and support, decreasing their uncertainty.

# CHAPTER FOUR

# ADVANCED NURSING ESSENTIALS REFLECTION

## Introduction

The Doctor of Nursing Practice (DNP) concentrates coursework on evidence-based practice, quality improvement, leadership, policy advocacy, informatics, and systems thinking, in addition to the education preparation for the advanced practice nurse. DNP graduates are entrusted with translating and implementing evidence into our practice. The DNP Essentials define the outcome competencies necessary for graduation.

As I look over the core competencies for professional nursing education, I find it hard to believe this part of the journey is concluding. The demanding academic journey and personal challenges I faced will continue to shape the practitioner I become. I have come to a deeper understanding of advanced nursing practice and executed the knowledge and skills obtained over the past three years. I have persevered through the rigor, discomfort, and pressure and am prepared to implement the *DNP Essentials* competencies learned throughout the DNP program at MSU.

### Application of DNP Essentials during Program

Our classes in *Ethics, Law, and Policy* as well as *Vulnerability and Healthcare in Diverse Communities*, helped me to understand how healthcare policy is created and developed at various levels; hospital, local, state, and federal. We performed policy analysis, assessed current dilemmas, diagnosed problems, crafted policy, and created an implementation plan. We also analyzed policies that are currently in place and looked at the intended and unintended consequences that directly affect population health.

Both our *Evidence-Based Practice* courses and our *Statistics* course imparted the knowledge to effectively critique research and determine the strength of the evidence presented. Understanding whether the data provided in research is credible or not is essential, as it will often change practice patterns and standards of care.

Communication and leadership with team members, outside professionals, patients, and their families are essential skills in practice. Several of our courses throughout the program imparted knowledge to strengthen these skills within ourselves and the practice of advanced nursing. Working on various assignments in *Design of Healthcare Systems* required collaboration between non-nursing departments and staff. Our projects for this course demonstrated how to analyze current systems, find root causes of complex problems, and address and demonstrate changes and improvements to problems while addressing the impact at each system level. Our group projects required collaboration and communication with individuals we didn't know well and who came from various backgrounds, ideas, education, and roles that forced us to work together, stay organized, and address issues with open minds and respect for each of our contributions.

Our course in *Healthcare Informatics* taught us how to differentiate information sources as reliable or nonreliable, introduced us to various electronic medical records and the data that may be gleaned from them, and ways technology can be both detrimental to and effectively assist in providing better health outcomes for our patients.

Table 4. Table of Essentials and Applications

| DNP ESSENTIAL | SUB-ESSENTIAL | COMPETENCY | APPLICATION IN PROGRAM |
|---|---|---|---|
| **Domain 1: Knowledge for Nursing Practice** | 1.1, 1.2, 1.3 | 1.1e, 1.1f, 1.1g, 1.2j, 1.3e | Used throughout clinical practice in our SOAP and treatment plans for our patients.<br>Applied Uncertainty in Illness theory in QI project |
| **Domain 2: Person-Centered Care** | 2.1, 2.2,2.5, 2.7, 2.8 | 2.1d, 2.1e, 2.2g, 2.2h, 2.5h, 2.5j, 2.7f, 2.8f, 2.8h | QI project centers on building trust and learning from the patient and working together to treat their illness and care needs.<br>Use of CPG to create plan of care.<br>QI project enhances education strategies.<br>Instructed the use of teach back method for educating patients. |
| **Domain 3: Population Health** | 3.1 3.3, 3.4 | 3.1m, 3.3f, 3.4h | Worked with stakeholders to address problem of decreased patient satisfaction and decreased education retention. |

| | | | |
|---|---|---|---|
| | | | Provided individual assessment of patient needs, barriers to care.<br>Wrote letters to Congressional representatives encouraging support of the DRUG Act. |
| **Domain 4: Scholarship for the Nursing Discipline** | 4.1, 4.2 | 4.1l, 4.2g, 4.2k | EBP I & II learned to critically appraise research. Appraised research for use in QI project.<br>Disseminated QI study for use in DNV accreditation. Shared research via poster presentations at MSU and within clinic setting. |
| **Domain 5: Quality and Safety** | 5.1, 5.2 | 5.1l, 5.1o, 5.3h | Evaluated evidence from QI into practice improvement.<br>Completed systems mapping of various processes within clinic and organization settings.<br>Shared outcome from QI project. |

| | | | |
|---|---|---|---|
| **Domain 6: Interprofessional Partnerships** | 6.1, 6.2, 6.4 | 6.1k, 6.1l, 6.2g, 6.3d, 6.4e, 6.4h, 6.4i | Organized work group events for team building.<br>Mentored new nurses through conflicts with other staff members.<br>Created after-work games to improve staff morale.<br>Journaling, and reflecting on interactions with other staff and patients to improve attitude and communication. |
| **Domain 7: Systems-Based Practice** | 7.1, 7.2, | 7.1f, 7.1g, 7.2h, 7.2j | QI project to increase patient self-management and improve patient outcomes.<br>DNP QI project created new patient education visit and provided billing opportunity. |
| **Domain 8: Informatics and Healthcare Technologies** | 8.1, 8.2, 8.3, 8.4, 8.5 | 8.1g, 8.1h, 8.2f, 8.3g, 8.3i, 8.4f, 8.5j | Healthcare Informatics class taught how to evaluate information and communication technologies for patient use. |

| | | | |
|---|---|---|---|
| | | | Pull data from EMR for evaluation.<br>Use of CGMs to manage education and treatment for patients in clinical.<br>Used secure EMR accounts to communicate with patients and make shared medical decisions.<br>Use CGM data to engage patient in lifestyle modifications and medication adherence. |
| **Domain 9: Professionalism** | 9.1, 9.2, 9.4 | 9.1i, 9.2i, 9.2l, 9.4e | Personal moral code of behavior with patients and staff.<br>QI project uses EBP to increase education retention, and learning needs for individual patients.<br>Communication with patients in an open, level, setting.<br>QI project meets requirements for QOPI certification via education topics and documentation strategies. |

| | | | |
|---|---|---|---|
| **Domain 10: Personal, Professional, and Leadership Development** | 10.2, 10.3 | 10.2g, 10.2h, 10.3o | Lead through example.<br>Demonstrated cognitive flexibility in various clinical sites, and with multiple preceptors by adapting to expectations and environments.<br>Demonstrated leadership in work setting with loss of director, advocating education opportunities for young nurses, offered support, encouragement, and direction in communication with leadership. |

The DNP curriculum enhanced our knowledge in pathophysiology, scholarly writing, statistics, ethics, leadership, and evidence-based practice. Our instructors helped us sharpen that knowledge and apply it to patient care in nuanced and creative ways within professional guidelines and standard practice. This knowledge has increased my confidence in understanding my patients' concerns and allowed me to organize their symptoms combined with the comprehensive health assessment into a treatment plan or workup to provide an outcome towards improving their health and well-being.

I had the opportunity to provide care on a Native American reservation. This provided a greater appreciation of the healthcare disparities experienced by this population. The experience prompted more discussion of why disparities exist and how to change the current system. This experience opened my eyes to the systemic and personal bias in my views.

Additionally, in clinical practice, I developed a greater understanding of how to apply the information obtained through technology and present that knowledge to the patient for a better understanding of medication use and lifestyle management. Communication abilities in rural areas using telehealth and secure EMR messaging offer patients ways to receive education and healthcare they would not be able to get because of location and cost.

## Quality Improvement Project Reflection

The QI project uses all the Essentials starting with finding the evidence found in scientific literature, evaluating the evidence, creating solutions and ways to improve care delivery, and evaluating and implementing potential solutions. I used the knowledge from our coursework and applied it to my project. All the work was done with the patient in the forefront and input from the nurses and staff responsible for carrying out the interventions.

Essential five is covered entirely with the work in my final project. The project focused on enhancing the education process for new patients starting cancer treatment. Using tools to build a trusting relationship between the patient and healthcare team by learning what the patient values in their healthcare, their level of understanding of their disease and treatment process, and providing further education to help them manage their health during treatment; we created an environment between patient and provider to improve quality and safety.

My leadership skills and interprofessional partnerships played a significant role in keeping nursing staff engaged and informed throughout the project; keeping physician involvement and compliance with new processes; and staying organized throughout the project. Coordination was required with IT and pharmacy, all contributing to the success of the project.

My nursing professionalism began to develop the moment I started down this path in undergraduate school and continues as I complete advanced-level nursing education. My prior experience combined with the knowledge and expertise I have gained throughout my time in this program and beyond defines my nursing identity. The skills gained are shown through my leadership in group and individual projects and my final project, which advocates and uses evidence-based solutions to problems while fostering relationships with patients to provide the most effective and shared solutions to their healthcare needs.

## Conclusion

As an older student, I quickly had to learn to publicly share information in forums I was not used to, as well as learn new technologies not used in my previous undergraduate education. I continue to be a lifelong learner, attending graduate school, conferences, and continuing education programs. I diligently look for ways to improve my practice with patients and with myself. Lastly, I strive to advocate for my patients through instituting improvement processes, providing education, and demonstrating concern for their well-being; I look for ways to promote the education, knowledge, and growth of nurses within my sphere by sharing knowledge, mentoring, and encouraging their growth.

The DNP degree further enhances my ability to provide for the health and well-being of any given population through evaluating new knowledge and applying the research in practice. I will work tirelessly to improve my confidence, knowledge, and skills to provide high-quality care. My goal as a provider is to catalyze change and impart caring and empathy that helps people to live a better, healthier life. I appreciate the support, patience, and faith MSU instructors have provided to me during my schooling. I will pay it forward as I move on to the next phase of my journey.

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# APPENDICES

# APPENDIX A

## Learning Needs Assessment

## Learning Needs Assessment

1. What are your short-term goals (i.e., ability to care for children, ability to work, maintain specific activities)?
   a.
   b.

2. What are your long-term goals (i.e., cure, maintain quality of life, reduce specific long-term side effects)?
   a.
   b.

3. What important events in your future that you like to attend (i.e., wedding, graduation, vacation)?
   a.
   b.
   c.

4. What is your preference for decision-making regarding your treatment and care?

   [ ] I want to be very involved and be the primary decision-maker.

   [ ] I want to be fairly involved, sharing in the decision-making.

   [ ] I don’t want to be very involved, allowing my doctor to be the primary

   decision-maker.

   [ ] I want to include my family, friends, or other support system in the decision-making process. Please specify individuals and the role you would like them to have:

5. Do you have any barriers to learning? I.e., cognitive, cultural, emotional, or financial limitation, visual impairment, language barrier, etc.  Please explain.

# APPENDIX B

New Patient Education Visit: Patient Survey

## New Patient Education Visit: Patient Survey

Date: __________ Verbal consent given________

Age: _____

Gender: M F

Diagnosis: __________________________________________

1) What is the goal of your treatment?

2) What was the most valuable part of your education session today?

3) Do you feel more confident or comfortable managing some of your symptoms/side effects at home? Please describe why or why not.

4) How might the delivery of your education session be improved, i.e., delivery of education, topics not discussed, more or less information?

5) How might communication between your healthcare team and you be improved?

# APPENDIX C

RN survey:  New Patient Education

## RN survey: New Patient Education

Date: __________________
OCN certified: YES NO
How many years have you been an RN? __________
How long have you worked in the Cancer Care Center? _______

1) Do you believe the NPE visit provides consistent and standardized education? Yes or No
   Why or why not?

2) Did you change the delivery format of the NPE visit?
   If so, how?

3) What would you change with the NPE: format/delivery/education topics?

4) Compared to how education was provided prior to the implementation of NPE visits, do you feel it is improved, the same, or worse than before? Why?

Today, you may have used the teach-back method to educate the patient. The teach-back method is when you provide new information, and the patient/caregiver is able to correctly rephrase and describe this new information back to you. With this in mind:

5) Did you use the teach-back method when you provided education?

6) What types of training or resources aided you in using teach-back during today's patient education visit?

7) What do you find helpful about using teach-back? What do you find challenging about using teach-back?