Patient Education Initiative Aimed at Reducing Postoperative Complications

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Abstract

Improving patient outcomes through evidence-based research and delivering high-quality care is a goal of many local, state, and federal regulatory agencies that monitor healthcare systems. Patient safety is considered a national priority which requires team building and therapeutic relationships between the provider, patient, and families. Patient education is just one of the many ways to improve patient outcomes, reduce costs, and form productive therapeutic relationships. A nurse-led education initiative was implemented to assess patient health literacy in a group of robotic-assisted urological surgery patients to reduce postoperative complications. Improvement was measured by a postoperative follow-up phone call within seven days of discharge. This quality improvement project focused on cost reduction, individualized teaching opportunities, and complication prevention. The project findings supported that preventing a complication was beneficial to the patient and the organization because it could reduce the length of hospital stay, decrease cost, and improve patient satisfaction.

Keywords: patient safety, patient outcomes, health literacy, cost reduction

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Section I. Introduction

Health literacy is essential to support and improve the active participation of patients in their healthcare decisions and ensure they drive the direction of their healthcare. Several healthcare organizations thrive in the heart of low-income, low literacy communities, ultimately affecting patient outcomes. This project aimed to use individualized, tailored teaching materials for urological surgical patients to improve health literacy, reduce readmissions, and prevent post-operative complications. Health literacy is constantly fluid, which means a person's comprehension can change from topic to topic. Never assume that someone with varying degrees of education or knowledge will be educated on the subject you are teaching them.

Background

The project partner was a 154-bed non-profit hospital located in a small rural community. This organization offered various patient care services in emergency care, medical-surgical, telemetry, cancer treatment, birthing center, critical care, urology, orthopedic, and surgical services. The project site is managed by a larger healthcare conglomerate with a mission to provide passionate care, promote advanced healing and inspire hope to patients and loved ones during their time of need. The hospital's vision is to deliver innovative care while promoting an excellent patient experience in the community they serve (Columbus Regional Healthcare System [CRHS], 2015).

The members of this rural community must travel to neighboring, more populated areas to receive higher-level care services that the organization does not offer. This can impose challenges to care such as inadequate transportation for exponential travel distances, financial constraints, follow-up care, and continuity with their primary care provider. With these challenges in mind, the organization understands the people and the community's needs and

wants to partner with a well-known urology provider to perform robotic urological procedures such as transurethral resection of the prostate (TURP), nephrectomies, and prostatectomies. The urology surgical provider is concerned with this being a new service offered in the community; what would be the best approach to improve the educational opportunities for the healthcare staff and the patients to optimize positive outcomes (personal communication, April 12, 2021).

Organizational Needs Statement

The organization's most challenging need was to ensure that patients could safely take care of themselves in their home setting after their surgical procedure. One of the reasons this became an organizational challenge was the identified gap around health literacy. As the organization sought to move forward with this new robotic surgery program, health literacy had to be addressed to ensure patients would show a reduction in readmissions and post-procedure complications. If the organization chooses not to address these two healthcare concerns, the patient and the organization can incur an exponential rise in healthcare costs. The organization knew that health literacy is part of the North Carolina Institute of Medicine 2030 goals and should be addressed with each patient encounter by utilizing patient teaching tools in an easy-to-understand format tailored to meet the patient's learning needs. The educational materials can come in the form of a patient information pamphlet, picture book, or animated video with information surrounding the pre-operative and post-operative care of the urology surgical patient. According to Alpher et al. (2021), some readmissions are preventable, and patient education is crucial to improving patient care and reducing healthcare-related costs. The organization participates in healthcare quality improvement programs such as the Eastern United States Quality Improvement Collaborative (EQIC), sponsored by the North Carolina Healthcare

Foundation (NCHA), to work on initiatives such as readmission reduction and improving health literacy (personal communication, March 25, 2021).

The North Carolina Institute of Medicine (NCIOM) has a task force that targets health literacy in the state to bring awareness that health literacy exists, reduce disease chronicity, and improve healthcare communications among people who have low health literacy (North Carolina Institute of Medicine [NCIOM], 2020). The project site is looking to mirror the goals of the NCIOM 2030 to reduce gaps in care, health disparities, and health inequities by focusing on health literacy. While there are no facility benchmarks to compare this project, there is data collected for North Carolina from a self-reported questionnaire that assessed health literacy in North Carolina adults. The results were released from 2016 collected data by the NC Behavioral risk factor surveillance system on 5,569 participants with varying ages and sociodemographic backgrounds, that concluded 5-8% of North Carolinians had difficulty obtaining health information or understanding written or oral forms of health information. Low literacy can lead to more emergency room visits, poor disease management, medication noncompliance, more hospitalizations, and increased mortality for older adults (Rafferty et al., 2020).

The Columbus County Health Assessment noted that Columbus County ranks number 99 out of 100 as the unhealthiest county in the state of North Carolina and that 6.33% of the residents fall below a 9th-grade educational level, and 33% of residents do not have more than a high school education with a county population of approximately 56,000 citizens (Columbus County Health Department [CCHD], 2020). The organization is looking to improve health literacy for these patients by doing a learning needs assessment and providing several opportunities for knowledge sharing between the patient and the healthcare team. The organization has identified a need to develop a robust educational program for this patient

population by doing one-on-one education and developing a comprehensive patient surgery education handbook with vital information to reduce adverse outcomes.

Understanding how adverse outcomes affect populations' health is critical when focusing on preventive care. One major cornerstone in healthcare is understanding and utilizing the Triple Aim goals, essential to any quality improvement-focused project. The Triple Aim seeks to improve the population's health patient experience and reduce healthcare costs by using a patient-centered interdisciplinary care team approach (Bachynasky, 2019). Improving health literacy will empower patients to become more engaged in their care, ask pertinent questions about treatment modalities, and enhance the patient experience. Improving the patient experience and empowerment will help reduce readmissions and disease chronicity.

Problem Statement

The problem addressed by the project site champion was identifying patients' comprehension surrounding pre-and post-operative care to reduce adverse outcomes such as deep vein thrombosis (DVT), pneumonia, and foley complications.

Purpose Statement

This quality improvement project aimed to reduce post-operative complications and readmissions through a nurse-led education initiative and identify those patients who had health literacy barriers.

Section II. Evidence

Literature Review

The search strategy for this proposed project plan was to devise a PICOT clinical question looking for different methods to improve adult learning and reduce adverse outcomes and readmissions postoperatively. The literature search on the formulated PICOT question was tailored to the urological patient and the general patient population who access healthcare in various settings. During the literature search, PubMed, Cumulated Index to Nursing and Allied Health Literature (CINAHL), and Educational Resource Information Center (ERIC) were used to look up evidence-based studies and documents that have been utilized in transforming the way healthcare settings and healthcare professionals are combating the world issue of patient education, health literacy as well as low health literacy.

The PubMed literature search produced 352 articles and publications using the MeSH terms "patient education" AND ("health literacy" OR "low literacy"), CINAHL produced 517 results using the same search terms, and ERIC had only four results with the same terms utilizing the 5-year filter in settings (see Appendix A). No exclusion or “NOT” Boolean terms were used to narrow the literature search because when it was added to the search tab, there would be zero citations found. Twenty-six articles contained citations that supported how literacy affected clinical outcomes. Of the 26 articles, five articles related to the project topic were retained utilizing systematic reviews and descriptive narrative sources from the level of evidence hierarchy pyramid (See Appendix B). These five articles were beneficial to this project because they focused on improving outcomes and assessing opportunities for improvement in how health literacy is approached in various clinical settings. The retained literature sources also aligned with the site partners’ goal of improving robotic urological surgery outcomes.

Current State of Knowledge

The literature review supported the best practice of using plain language and patient-specific teaching rather than blanketed teaching materials that might be produced at a higher educational level than most patients can understand (Cutilli, 2020). There was abundant literature on patient learning about the adult learner, but not explicitly tailored to the urological surgical patient. Extrapolating information learned from the literature search had to be utilized to generalize the urological surgical patient through analyzing the adult learner patient articles in various healthcare settings.

According to Williams et al. (2016), a systematic review of ophthalmology patients revealed poorly written educational material for low literacy patients. The review analysis concluded that patient education materials should be formulated on a sixth to the ninth-grade academic level for easy comprehension. Pictures, animation, and web-based education are becoming popular in clinical education. The use of visual aids was shown to help improve provider-patient communication, reduce barriers, and improve health outcomes while reducing cost (Pratt & Searles, 2017). Health literacy is ongoing evidence-based research and is an essential Healthy People 2030 goal that focuses on personal and organizational health literacy holding healthcare professionals accountable for ensuring the patient's needs are met, even if that means thinking outside of the box (Santana et al., 2021). The impact of health literacy continues to be a widely studied area to decrease gaps in care. A prospective study on trauma patients in Southern Arizona noted patients with low health literacy had poor outcomes such as increased hospitalizations, increased mortality rates, and skyrocketing healthcare costs (Swartz et al., 2018).

Current Approaches to Solving Population Problem(s)

The current evidence from the literature helped address the specific targeted population's problem regarding ensuring that patient education is concise and straightforward. There are a few ways identified that will help determine the patient's health literacy need, which could be helpful for the partnering organization to gain insight into the literacy or barriers of the population they serve. First, a learning needs assessment should determine how and what method the patient will learn best to retain information. A descriptive cross-sectional study conducted by a surgical clinic showed that patients could effectively manage their disease and complications through a learning needs assessment that focused on learning deficits and bridging gaps in care related to improving post-surgical outcomes (Deniz et al., 2017). The next step is to provide evidence-based teaching materials written in lay terms, short sentences, and illustrations on an elementary grade literacy level. Then, focus on key teaching elements using the teach-back method to understand the education material. Finally, utilize caregiver involvement to help the patient transition from the healthcare setting to home (Dols et al., 2020).

A cross-sectional survey study concluded that patients with low health literacy have higher rates of high-risk health behaviors, difficulty managing chronic diseases, poor medication management, high rates of hospitalizations, and increased healthcare costs, which can be improved through appropriate screenings and implementation of health literacy interventions early (Ylitalo et al., 2018). Paterick et al. (2017) felt that improving patients' self-efficacy would improve patient outcomes and thought it was the role of the provider to promote education and engagement with the patient through behavior modification to reduce modifiable risk factors such as coronary artery disease, obesity, smoking, and metabolic disorders. As patients become

more complex to manage and are burdened with various co-morbidities, the risk of poor health outcomes will drastically increase.

This Doctor of Nursing Practice (DNP) project focuses on quality improvement, patient safety, and improving the patient experience. Landis (2020) discussed that patient experience is closely aligned with health literacy and treating each patient or family as a cookie-cutter approach with assessment or interventions related to health literacy is not beneficial for the provider-patient therapeutic relationship. A primary health literacy assessment and adjustment of literacy interventions such as interchangeable teaching modalities will help the patient and family meet their goals, empower them to make informed decisions, improve their experience and foster better health outcomes (Landis, 2020).

Evidence to Support the Intervention

One intervention that could help reduce adverse outcomes and readmissions for this population of patients is to assess patient and family literacy by using standardized literacy tools containing subjective and objective data points, such as the Rapid Assessment of Adult Literacy in Medicine (REALM) and the Test of Functional Health Literacy in Adults (TOFHLA). Using the REALM and TOFHLA literacy tools or an equivalent will help medical professionals assess the patient's ability to comprehend medical information or terms through word recognition (Schulz et al., 2021). Assessing health literacy is beneficial for this partnering organization to understand the social determinants of health affecting the patient's care because of its limited resources in rural communities and low-income households. The provider and patient relationship are relevant to this project's success because the provider can reduce disparities, ensure trust, and bridge gaps in care to improve outcomes through patient teaching (Tsai et al., 2018). A healthcare provider can incur some accountability when making sure the patient

understands critical concepts related to their disease process, so teaching reinforcement and ongoing literacy assessments are valuable.

A health literacy tool intervention should be the cornerstone for starting this DNP project. The health literacy tool will provide a baseline analysis of the patient's literacy level and how much teaching will be needed to reach the goal. Suppose the patient is having difficulty understanding the educational material presented to them. In that case, it will ultimately set the patient up for failure in managing their disease and heighten the likelihood of adverse outcomes.

Evidence-Based Practice Framework

The evidence-based practice framework used for this project will be guided by Everett M. (E.M) Rogers' theoretical framework Diffusion of Innovations (DOI), first implemented in 1962. Over the years, E.M. Rogers has revised and updated his original work on Diffusion of Innovations. His research saw changes in the team structure surrounding team ideas and how the team reached a mutual understanding of the team's goal. E.M. Rogers (1983) stated that persuasion was a critical element of the diffusion theory, and the goal is to change attitudes and not behaviors. E.M. Rogers's framework suits this project well because invoking change in this small rural community hospital has faced many challenges over the years; it has seemed hard for a sizable number of staff to embrace a newly implemented process. Utilizing this framework will be rewarding but challenging. Still, as the role of the change agent, the goal is to move the team through the different channels to where many of the staff supports the idea of improving the community's health through health literacy and helping champion the project. In contrast, others may pose a challenge and must be persuaded to believe in the project's mission and value.

Roger's Diffusion of Innovation works through the process of adaptation of a new idea and how people must be persuaded to go from negative views to positive views to adopt change.

The DOI looks at how innovators implement an idea and then disseminates the supporting information to support why the changes will benefit the group. Groups of individuals can go from early adopters, the early majority, the late majority, and laggards. Laggards account for approximately 16% of the population that is skeptical about change, which can ultimately lead to idea stagnation or fall through (Iqbal & Zahidie, 2021). The value this framework brings to this proposed DNP project is understanding how to move people from one category to another while being mindful that the goal for most of the group is to be classified into the adopter category. To see change, the implementor or innovator must bring the laggards onboard into the late majority category to support the new idea or organizational change so the process will be successful.

Ethical Consideration & Protection of Human Subjects

Protecting human subjects and reducing harm is the ethical responsibility of the Doctor of Nursing Practice student. There are no ethical considerations that stand out with this DNP project because all subjects in the target population had the right to fair selection and treatment of the teaching modalities. De-identifying health information will be protected using the patient's last five digits of the medical record number (MR number) instead of the first and last name identifiers on the health literacy needs assessment form.

In preparation for the Institutional Review Board (IRB) approval process, Collaborative Institutional Training Initiative (CITI) modules were completed focusing on behavioral health sciences terms and conditions of equitable research of subjects. The project site did not have an internal committee for project review, so the approval process was done through the University. The College of Nursing's Quality Certification Tool differentiated between the project being classified as a research project or a quality improvement (QI) process. The DNP project was

deemed QI, and therefore further IRB review from the University was not warranted (see Appendix C).

Section III. Project Design

Project Site and Population

The site for this project was in a rural community located in Southeastern North Carolina, which consisted of a large uninsured poverty-stricken population with low literacy. The Emergency Room serves many of its citizens as their primary care services, making it challenging to manage chronic diseases and improve the county's health. The project site is branching out into neighboring counties, opening primary care services, urology services specializing in robotic procedures, and orthopedic care to provide more services to people and generate more revenue.

The primary facilitators for this project were the project lead, project champion, and facility nurses. The project had an easy implementation and start-up because of the support provided by the project site and low financial funding requirements. Multiple barriers were identified that hindered the ease of this project, such as staff consistency with making sure patients receive the learning needs questionnaire and documentation of the education in the electronic health record. These time constraints increased the time spent with the patient completing the learning needs questionnaire and increased nurse workload during their shift. Increased workload and time could pose a challenge to the accuracy of data collection and project outcomes.

Description of the Setting

The project site's pre-operative testing department is a small unit with approximately four nurses that already provide patient teaching and assist with completing the patient's health history. The patients' pre-operative testing appointment would be an excellent opportunity to discuss their learning needs and style to manage post-operative care in the hospital and at home

post-discharge. Usually, the patient's time in this department is brief, so taking the opportunity to make the education session meaningful will benefit the patient, nurse, and organization.

Description of the Population

The target population evaluated for this quality improvement project were patients who received robotic urology-assisted surgical procedures. Each patient had an equal opportunity to participate in this quality improvement-focused project because the selection was based on patients who had urology disorders. The patients were male or female, ranging from 40 to 80+ years old. Many of these patients had multiple co-morbidities, which placed them at a higher risk of complications.

The organization's staff caring for these patients were Registered Nurses who worked in the Outpatient Testing Department and the Medical-Surgical Unit. These nurses had varying degrees of education, ranging from an Associate Applied Science degree to a Bachelor of Science degree, and they had several years of patient experience combined. The education afforded to the staff focused on patient safety and outcomes while supporting team-building relationships and critical thinking. The nurses were highly engaged, supportive, and concerned about the appropriate level of patient teaching received at discharge.

Project Team

The project team consisted of the Doctor of Nursing Practice (DNP) student (the project lead), the faculty advisor, which the University supported, the site champion, the facility pre-operative testing department, the quality improvement department, and the National Surgical Quality Improvement department (NSQIP). The DNP student's role consisted of facilitating the implementation of the project, assessing barriers to outcome measures, and constantly evaluating the process to obtain reliable data. The DNP student disseminated the information discovered

during the implementation and evaluation phase. The information gathered during the evaluation phase helped illuminate the project's importance for the patient and the organization while staying focused on meeting quality improvement metrics. The faculty advisor and the project site champion had unique roles in implementing, evaluating, and assisting with formulating the DNP project goals. The site champion and facilitator helped the project lead by assessing if project goals were defined to improve health literacy and reduce postoperative complications in this population of patients. The pre-operative testing department assisted with project implementation by assessing patient health literacy and providing educational materials during their encounter for surgical preparation. Finally, the Quality Improvement Department and NSQIP Department assisted with data extraction by looking at outcome measures that assess post-surgical readmissions or complications. All team members worked collaboratively in an interdisciplinary care team approach to ensure the success of this project.

Project Goals and Outcome Measures

This project aimed to reduce readmission rates and postoperative complications from mid-October to mid-December with individualized patient teaching opportunities utilizing different learning styles. Learning styles were conveyed through sensory channels such as visual, aural, written, and kinesthetics. Teaching modalities can be portrayed through touch, hearing, printed format, and pictures such as diagrams and graphs (Dantas & Cunha, 2020). The different learning styles can be used individually or all-inclusive to improve the patient learning experience. This DNP project used a combination of the learning styles during patient teaching encounters.

The project goals and outcomes were reviewed and analyzed from the data received on the patient learning needs questionnaire and the electronic health record documentation. Once all

data was analyzed, it was compared to what the literature review findings supported surrounding patient teaching and surgical outcomes. One way to optimize outcomes is to educate patients in a timely manner to reduce pitfalls in treatment plans. Understanding the barriers that hinder adequate patient education made the organization prioritize finding the best approach to meet patients' needs.

Description of the Methods and Measurement

The University IRB process determined that a full IRB review was not warranted because the project was quality improvement focused. The project site did not require a review process to implement this project. The learning needs questionnaire consisted of six questions to assess the patient's ability to comprehend teaching materials and navigate the healthcare system. The final question on the questionnaire asked if the materials were displayed in an easy-to-understand format to gauge if the materials were written above the 8th or 9th-grade level as identified by the literature review as a health literacy barrier. (See Appendix D).

During the implementation phase, data was retrieved from the learning questionnaire using an ordinal-level measurement system similar to the Likert scale that determined if the patient always, often, sometimes, occasionally, or never had any issues or concerns with question content. Each question on the questionnaire had a numeral weight that was tallied at the end of the form to depict if the patient required additional educational opportunities. Once the nurse completed the questionnaire and obtained the numeral value, the teaching session was conducted using a one-on-one individualized teaching session.

Discussion of the Data Collection Process

The data collection tool was used to document information obtained from the electronic health record and the patient learning need questionnaire responses. The collected data was

placed on a spreadsheet that included information such as the last 5-digits of the patient's medical record number, sex of the patient, if the questionnaire determined limited health proficiency, was teaching provided, and did the patient receive a postoperative phone call at discharge to follow-up on additional learning needs (See Appendix E). The electronic health record documentation was reviewed for pre-surgical teaching, detailed surgical care notes about the procedure, and post-surgery outcomes before being discharged home. After the patient was discharged home, they received a postoperative follow-up phone call which completed the data collection process.

The postoperative phone call allowed the patient to address any concerns and discuss whether a postoperative complication had occurred once discharged home. The postoperative phone call also served as an additional learning opportunity to reinforce teaching received during their preoperative and postoperative surgical period. The data collection process occurred weekly to ensure accurate and timely record-keeping, focusing on the number of completed questionnaires and supporting nursing documentation regarding patient participation and barriers encountered during teaching. Once all the data were collected, it was analyzed to determine if the proposed interventions met the facility's goals and needs.

Implementation Plan

The implementation process began mid-October until mid-December of 2021. This phase of the DNP project started with an hour lunch session with the project team discussing the project goals and outcomes. The learning needs questionnaire was discussed, and detailed examples were given on collecting and documenting the data. The lunch session allowed the staff to ask questions, clarify areas of concern, and provide feedback on how user-friendly the form would be for themselves and the patient. Engaging in staff feedback promoted team

engagement and assisted the staff with becoming more involved in bringing this project to fruition. The DNP student met bi-weekly with facility staff and the project site champion to evaluate progress, assess barriers, and review recommendations to change until the last week of October. The process changed in mid-November, removing the Preoperative Testing Department from the project team due to COVID-19 staffing concerns and reduced surgical procedure scheduling. At that point, meetings between the DNP student and site champion occurred weekly for process improvement analysis.

Timeline

The project began with a lunch session on September 29, 2021, with the project site champion and nursing staff who assisted with the project implementation. After the lunch session, the implementation phase started on October 11, 2021, at the start of the business day in the pre-operative testing department. On October 22, 2021, a follow-up visit was made with the staff to assess if any barriers were presently interfering with implementation. The following week, October 29, 2021, a follow-up visit was made to the project site to evaluate progress and barriers. During the October 29th visit, a plan-do-study-act (PDSA) revision was discussed to capture a larger patient population. The process change took effect on November 1, 2021, to incorporate a variety of robotic urological procedures among men and women. The subsequent visits occurred bi-weekly for November and December, assessing project success and challenges and obtaining patient information from the medical record to complete the data collection tool. The final staff check-in was on December 17, 2021, which included a debriefing session with the project site champion looking over project goals, associated barriers, what worked well, and what could have been done differently (see Appendix K).

Section IV. Results and Findings

Results

The patient population assessed for this DNP project was urological patients who had various procedures such as prostatectomies, cystectomies, urostomy tube placement, pyeloplasty, transurethral resection of the prostate (TURP), and nephrectomies with robotic assistance. The data collected from mid-October through mid-December consisted of sixteen patients. The patient population included 13 males (81%) and three females (19%) ranging from 47 to 89 years old. The median age of the patient population was 69 years old (See Appendix F). The results did not contain any bias in patient selection; each patient that had a urological surgical procedure with robotic assistance from October 11th through December 17, 2021, was assessed for limited health proficiency.

During the preoperative learning needs assessment, 13 of the 16 patients (81%) indicated having difficulty reading printed materials more than once. They had to read over the material several times to understand better what the information was telling them. Eight out of 16 patients (50%) indicated the need to take a family member or friend to their doctor's appointment to help them understand what was said regarding their plan of care. Five of the 16 patients (31%) reported difficulty understanding their medication indication. Four out of 16 patients (25%) said they had trouble completing medical forms or understanding printed education materials. Only three of the 16 patients (19%) reported having difficulty understanding their discharge or procedure instructions. During the postoperative follow-up phone call, most of the patients (75%) said that the education materials were written higher than an eighth-grade level, making them challenging to understand (See Appendix G).

The DNP project questionnaire included patient questions that focused on past experiences navigating the healthcare system assessing for gaps in care surrounding health literacy. Evaluating the patient's past experiences through their questionnaire responses helped the DNP project student target areas of concern or barriers to help maximize the patient teaching sessions. Maximizing patient teaching sessions were beneficial for the patient and the organization; only two of the patients (12%) had a complication or readmission reported during the project implementation period (See Appendix H).

Discussion of Major Findings

Significant findings of this quality improvement project revealed that 13 of 16 patients (81%) had limited health proficiency and issues with comprehension. This was shown by the patient reporting the need to read the printed materials more than once to understand better what was asked or said. Patient comprehension is essential to improving outcomes, reducing costs, and hospital readmissions, which is why 81% of the patient population reporting difficulty with comprehension is alarming to the findings of this project. As the comprehension question percentage increased, it posed a significant risk of the patient having a complication or readmission. One event was for a foley complication, which resulted in a hospital readmission. The second event was an Emergency Room visit for abdominal pain. These two events accounted for 12% of the patient population and were unrelated to a knowledge deficit surrounding preoperative or postoperative care teaching. All 16 patients were seen during their hospitalization and participated in postoperative education, including teach-back and return demonstrations.

The initial data collection process had to be revised during the implementation phase related to a communication barrier from the organization staff to the project champion or DNP

student. The project champion and DNP student discussed how communication barriers were affecting data collection and felt the project would benefit from a plan, do, study, act (PDSA) revision to include visiting the patients on postoperative day number one before discharge to complete patient teaching and discuss the process for follow-up. More patients were captured weekly after the PDSA revision, improving patient teaching opportunities.

Evidence in the literature supported that patient education will improve populations' health by allowing them to make better-informed decisions, reduce economic burden, and improve treatment regimen compliance and patient satisfaction (Fereidouni et al., 2019). Acquiring these skills will help patients focus on health promotion and healthy behaviors to improve their health status. As patient education continues to be a national focus for healthcare entities, the educator must remain cautious not to give the patient materials that contain a lot of high skilled level vocabulary and increase the utilization of pictures when possible to improve the patient's teaching experience and comprehension. It is also essential for the provider to individualize their patient teaching approach by using several teaching methods to ensure the patient understands the teaching topic (Rooney et al., 2021). Findings from the project aligned with the literature that individualized patient teaching, use of illustrations, and the teach-back technique were important for patient success. A few gaps in care identified during project implementation would help improve patient outcomes, such as using technology, onboarding an inpatient nurse educator, and a transitional care management team that would follow up with the patient at discharge to advise, support, and refer for available resources.

Section V. Interpretation and Implications

Costs and Resource Management

The cost of this quality improvement project on a small scale was feasible and economical. The project was cost-effective because the DNP student completed most of the work, such as patient teaching, data collection, and post-operative follow-up. The actual project budget was estimated at $337.00, with the bulk of the cost being associated with patient education packet printshop fees (see Appendix I). The estimated annual budget was $66,900, with most of the cost associated with the nurse's salary (see Appendix J).

The project implementation phase took approximately 80 hours of on-site visitation and meetings with the project team and patients. The literature review process took 40 hours to find articles about health literacy, several abstracts were read, and the literature search log and literature matrix were formulated. Several articles and article abstracts were reviewed and evaluated that supported the project's main topic of health literacy and its impact on patient outcomes. Implementation was approximately 80 hours, including on-site visits, reviewing the questionnaire with patients, data collection, postoperative follow-up phone calls, and project questionnaire result review. If the organization were to pay the estimated projected budget of $30 per hour of nurse salary, developing and implementing this project would be approximately $3,000, not including supplies and other associated costs. The project was scaled down to the lowest end of the budget during implementation to make it cost-effective and attractive for the organization.

Implementation of this project can positively impact the organization, patients, and families by reducing the financial burden associated with postoperative complications. In contrast, Ludbrook (2021) stated that postoperative complications could negatively impact the

patient, family, and the health care organization by increasing the financial burden and reducing the quality of life and psychosocial well-being. To combat this issue, stakeholders, funders, and clinicians must prioritize preventing postoperative complications and implement strategies to improve the quality of care delivered to the patients they serve. Postoperative complication costs can vary with the severity of the complication and how many complications have been incurred during the event. The average cost of a postoperative complication ranges from $3,000 to $130,000 according to a study conducted on 1200 general surgery patients who at least had one postoperative event (Ludbrook, 2021).

Implications of the Findings

Implications of the findings can benefit the patient, nursing practice, and the organization because current practices can go under review, looking for potential risks and benefits woven into their existing processes. Assessing current processes can initiate a conversation between the interdisciplinary care team members to strive for improved patient outcomes. Once problems are identified, specific, measurable, achievable, relevant, and time-bound (S.M.A.R.T. goals) can be formulated to pave a pathway to change. During this evaluation process, the interdisciplinary care team can also evaluate processes that are well defined in their current processes and do not warrant any change.

Implications for Patients

If the patient incurs a postoperative complication, the negative implications could include loss of wages, increased financial burden, excruciating pain, and psychological impairment. An unplanned surgery can leave the patient and family in a vulnerable spot because they might not have Family Medical Leave Act days, vacation days, or sick leave days available to cover home expenses. The patient or family might also have a little money saved which could dissipate

quickly to cover family obligations, leaving some families to face bankruptcy or other hardships. Some patients may postpone their surgical procedure to reduce unnecessary hardships, causing worsening of their disease process.

The positive implications for this patient teaching initiative are improved patient and provider communication, higher patient satisfaction scores, and better patient and family engagement in the plan of care. The patient and family will have more accountability for their care and feel more empowered because the care plan was formulated as a collaborative approach between the patient and provider. If the patient and family have an active role in their care, they will be more compliant with the medical treatment, reducing adverse outcomes.

Implications for Nursing Practice

The implication for nursing practice is better communication between the patient, nursing staff, and other disciplines. Patient education is essential in preventing complications at discharge and can be assessed with the teach-back technique. The teach-back technique will allow the patient to repeat what was said during the teaching session to show understanding of the learning content. The teach-back strategy is a vital teaching tactic because it involves verbal and tactile skills to help with muscle memory and comprehension. The nurse has a supportive role in ensuring the patient can comprehend the teaching provided.

Interprofessional collaboration and nurse-driven education initiatives can reduce health disparities in patient populations and empower patients to ask questions about their disease process. Interprofessional collaboration and nurse-driven teaching initiatives can also lead to high-quality patient-centered care because it fosters better team communication and improves patient satisfaction (Zechariah et al., 2019). Finally, patient and family satisfaction is monumental to the organization’s ability to showcase its pragmatic efforts surrounding safety,

engagement, empathy, and shared decision making. The Centers for Medicare and Medicaid Services (CMS) initiated the Healthcare Providers and Systems (HCAPS) survey, which gives the organization a scored rating based on the patient's satisfaction with the services received. This scoring system has made organizations find ways to be creative and think outside the box to improve opportunities to attract new patients into healthcare consumerism. For this reason, improving health literacy is one of the top priorities and should not be overshadowed by hospital profit margins; it is about always doing the right thing for the patient.

Impact for Healthcare System(s)

The impact on the healthcare system is the financial ramifications of reimbursement on preventing postoperative complications such as hospital-acquired pneumonia (HAP), catheter-associated urinary tract infection (CAUTI), or deep vein thrombosis (DVT). Value-based programs are designed to reshape healthcare and offer incentive payments for healthcare entities who participate in Medicare funding to improve their quality care index. Two of the programs that the Centers for Medicare and Medicaid Services (CMS) have in place that pertain to this quality improvement project are the Hospital Readmission Reduction Program (HRRP) and the Hospital-Acquired Conditions Program (HAC).

The Centers for Medicare and Medicaid Services (CMS) programs are designed to improve care coordination to prevent readmission or healthcare-acquired events. Pay for performance is a reimbursement tool utilized by CMS, and the organization could be penalized for poor performance by losing some of its reimbursement costs. Suppose the organization lost some of the reimbursement cost. In that case, they have a 30-day review period to regain some of the money held for negative performance (Centers for Medicare and Medicaid Services [CMS], 2021). Monetary funding is essential for the organization's growth and survival. If patients are

not satisfied with their care at an organization, they will take their business elsewhere, negatively impacting organization sustainability.

Sustainability

This patient education initiative project is easily adaptable and cost-efficient. The most cost incurred would be staff wages and material costs for printing the patient education handbooks. The data collection spreadsheet was easy to complete making it easy to track and trend in real-time preventing outcome barriers. The follow-up phone calls helped gain more insight into the patient's postoperative period at home and provided additional teaching opportunities. Sustainability for this project is currently not feasible due to COVID-19, which has led to staffing shortages in many of the units. The project site champion discussed the future goal to include an education program tailored to specific surgical services such as orthopedics, urology, and general surgery. The organization would like a robust patient education program closely aligned to the patient education initiative detailed in this quality improvement project to help meet CMS standards and improve patients' health in their community.

Dissemination Plan

Project findings were disseminated at the University College of Nursing presentation for faculty and peers on April 5, 2022. The dissemination consisted of a poster presentation discussing the project's purpose, problem, methodology, outcomes and findings, the implication to practice, project barriers, and future recommendations. A meeting with the project site champion took place via skype to discuss project outcomes and recommendations for improving health literacy in this clinical setting on March 15, 2022. The final project paper was submitted the week of April 26, 2022 to the University ScholarShip Repository for anyone to review the DNP quality improvement work. An abstract submission to the American Nurses Association

(ANA) Conference held annually on quality improvement is considered. The ANA conference allows nurses to network with other nurses who have completed quality improvement-focused initiatives.

Section VI. Conclusion

Limitations and Facilitators

The project implementation phase was met with several limitations, such as staffing related to COVID-19, a new physician who recently started performing robotic urological surgeries on June 1, 2021, and a delay in beginning project implementation of approximately four weeks because of unforeseen circumstances with the project site champion. Many areas were short-staffed in the organization due to taking care of COVID-19-related inpatient illnesses. The organization transferred nurses utilized in the preoperative department to other units in the hospital to take care of the current influx of acutely ill patients. Many surgery schedules had to be adjusted related to bed availability for those patients who would need to be admitted after their surgical procedures. Once the implementation process started, it was identified that the project needed to expand to more than prostatectomy patients to incorporate a larger patient population. A Plan, Do, Study, Act (PDSA) analysis was done, and revisions were made for the patients to be followed up on the surgical floor post-operatively and receive a follow-up phone call within seven days of going home. Revising the initial implementation plan was beneficial for project data collection and assessment of patient outcomes.

The new practicing physician is building his clientele in the area, so his surgical cases were not as high volume as from the previous facility. The organization is pleased with the patients brought into the facility because of his specialty in robotic-assisted procedures. The final barrier or limitation was the project site champion was out for approximately two weeks. She had to catch up on important hospital affairs when she returned, which delayed project implementation for one month.

Facilitators of the quality improvement project included the Chief Executive Officer, the project site champion, the patient's electronic health record (EHR), and interprofessional collaboration with the urology practice. These facilitators helped to improve access to pertinent information related to data collection. The project site champion was readily available via phone or email to engage and discuss any needs about the project, which made the implementation process less stressful. The initial meeting with the Urology staff regarding the project purpose and problem gained support for focusing on improving patient outcomes and reducing complications. The patient's EHR was easily accessible and a means to gather patient information related to their surgical procedure, postoperative risk factors, and discharge disposition.

Recommendations for the Organization and Others

The recommendation for others wanting to implement a similar project or continue the work of this project would be to start small before implementing the program systemically. The one-on-one education sessions for patients were beneficial for the healthcare providers to include teach-back sessions and patient return demonstrations on various information provided. The one-on-one teaching allowed the interdisciplinary care team to personalize teaching sessions for the patient, not feel rushed, and cover all learning needs during the teaching session.

Interdisciplinary communication and stakeholder support are essential for quality improvement project success. Solidifying stakeholders' buy-in provides opportunities for interdisciplinary engagement to present new ideas or opinions. Once the DNP student has solidified stakeholder buy-in, there are key elements to keep that relationship beneficial for all parties involved. One way to manage the project site relationship is to be truthful if challenges become overwhelming and project failure is imminent. Communicate in real-time to discuss the

challenges or project benefits and always involve the project team because every little celebration or win will be seen as meeting the project goal. Another recommendation is to utilize more interactive technology such as iPad or tablets for visual experiences with the patient. Sometimes visual exploration can improve patient processing of the information. This can be done by starting with two tablet-like devices per unit with a hyperlink or icon to patient education interactive material that will be easy for the patient to identify and navigate. The goal is not to have this tablet-like device become a barrier but to help nursing staff accommodate the patients learning experience. Another way to help improve the patient's learning experience is to incorporate an inpatient nurse educator to help the nursing staff manage patient teaching on the units. The patient-nurse educator can help those patients with complex teaching concepts gain an understanding by personalizing the session. The patient-nurse educator will help the primary nurse meet the patient's needs while decreasing nursing staff stress due to the unit's high patient-nurse ratio of one to six. An additional recommendation is for the organization to start a nurse-led patient education committee to evaluate the best practices and how the organization can meet the patient's needs and improve outcomes through teaching modalities. This committee could meet quarterly as part of the organization's quality improvement-focused goals. Finally, continue the postoperative follow-up phone calls to assess patient progress at discharge and incorporate additional educational opportunities.

Recommendations for Further Study

The project can be replicated in various settings, even primary care. Patient health literacy assessments should be part of the initial visit and reassessed annually to identify any changes that may have occurred. If the patients learning needs have changed, the teaching methods previously used should be revised. Patients with health literacy deficits should have a

personalized, tailored teaching approach regarding disease processes, medication management, and self-care at home. Utilizing android or iPad tablets to provide more visual learning methods to support patient teaching can improve regimen compliance, help the provider provide in-depth education on preventive care, and allow the patient and family to make better choices through informed decisions. The final recommendation would indicate further studies regarding learning styles and teaching methods in the organizational setting to see which methods were utilized the most and how the methods improve patient comprehension and outcomes.

Final Thoughts

Improvement of patient outcomes through assessing health literacy was the goal of this DNP project. The project aimed to reduce postoperative complications or readmissions at a small rural community hospital that had identified a problem with low literacy and patient compliance. The project included completing a learning needs assessment on each patient who had a robotic-assisted urological surgical procedure and provided one-on-one education opportunities with teach-back methodology and return demonstrations to validate understanding of content. The project was completed over ten weeks with key findings suggesting that 88% of the patient population had a learning deficit based on answering sometimes, always, often, or occasionally on the learning needs assessment questions. The patients who completed the learning needs assessment felt the educational content was written in an easy-to-understand format and served as an additional learning opportunity. Every patient teaching encounter should be meaningful, impactful, goal-directed, and timely. This project was conducted in an acute care setting but could be replicated in an array of healthcare settings to improve patient outcomes through appropriate assessments and reassessments.

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Appendix A

Literature Search Log

DNP Project
Literature Search Log

Student: Arrian Dexter | **Date of Submission:**

Project Title: Multimodal educational pathways for patients who receive robotic assisted urological procedures

Date of Search	Database	Key Word Searches	Limits	# of Citations Found / Kept	Rationale for Inclusion / Exclusion (include rationale for excluding articles as well as for inclusion)
112/2019	*CINAHL (EBSCOhost)*	*Emergency department AND delays AND admissions*	*5-10 year period, English language, etc.*	*25 found 3 kept*	*1 redundant; kept articles directly related to clinical question*
6/9/2021	PubMed	teaching methods AND health literacy AND hospital readmission	5 yr period, English language, exclusi	3 found/ 0 kept	Excluded all articles because information did not pertain to methods of teaching
6/9/2021	PubMed	readmission	5 yr period, English language	19,887 found/0 kept	Excluded all citations, information was too vague pertaining to readmission not related to teaching to reduce readmission in articles reviewed. Massive amount of citations found, not all articles reviewed.
6/9/2021	PubMed	reduce postoperative complications	5 yr period, English language	26,791 found/ 0 kept	Massive amount of articles found, reviewed first few citations and non were found related to reducing post-operative complications. Not all citations reviewed. Refined search.
6/9/2021	PubMed	teaching methods AND health literacy	5 yr period, English language	169 found/2 kept	The two articles kept had information related to literacy assessment. Other articles were excluded because information did not pertain to showing best practice or methods of literacy teaching.
6/9/2021	PubMed	teaching methods	5 yr period, English language	80,149 found/ 0 kept	Massive amount of articles found, not all reviwed because first few pages of citations did not provide any supporting evidence of teaching modalities to improve health literacy. Refined search.
6/9/2021	PubMed	teaching strategy for low literacy patients	5 yr period, English language	115 found/ 1 kept	article kept pertaining to patient literacy and strategies to improve literacy
6/9/2021	PubMed	VARK learning style	5 yr period, English language, exclusion child or children	33 found/ 2 kept	articles kept related to learning styles. Some articles did not pertain to learning styles so they were excluded
6/9/2021	PubMed	VARK learning style AND readmissions AND OR reduce postoperative complications AND OR low health literacy AND OR teaching methods AND NOT child OR children	5 yr period, English language	14 found/0 kept	skimmed articles, did not keep any from this search due to redundancy and limited inclusion criteria related to learning styles, health literacy and post operative complications
6/14/2021	PubMed	patient education AND health literacy Or low literacy	5 yr period, English language	972 found/ 0 kept	No articles kept due to redundant citations listed.
6/14/2021	CINAHL	patient education AND health literacy Or low literacy	5 yr period, English language	517 found/ 3 kept	only 3 articles kept this search after skim of first 30 pates that discussed patient education and low literacy outcomes
6/14/2021	ERIC	patient education AND health literacy Or low literacy	5 yr period, English language	4 found/ 0 kept	No articles were kept due to citations did not show how to improve or assess health literacy related to outcomes
6/17/2021	PubMed	multimodal education AND patient education AND health literacy OR low literacy	5 yr period, English language	8 found/1 kept	kept article related to multimodal teaching

Appendix B

Literature Review Matrix

Cutilli	2020	Excellence in patient education	Self-care theory	*Nursing Clinics of North America*	Patient education should be an individualized tailored approach using assessment, planning, implementation and evaluation consistently throughout the process. The teaching should be multimodal, concise, and meet the needs of the patient	This article used descriptive narrative rather than a design study	Level IV- improvement of health literacy through assessment, planning, implementation, and evaluation	Self-care theory by Dorthea Orem	no sample size because article was not a study	N/A	N/A; can be used for any population to assess health literacy	The author concluded that patient teaching resembles the parts of the nursing process with more focus being placed on implementation. The author found that assessment and evaluation was just as important to ensuring patient teching was adaquate and incorporated multimodal approaches.
Williams, Muir, & Rhosdahl	2016	Readability in patient education in patient education materials in opthalmology	Self-care theory and Self-attainment	*BMC-Opthalmology*	Not every patient can comprehend information on the same level and instructions or teaching materials should reflect the patient level of learning for comprehension and sustainability.	systematic review of literature from 13 studies	Level III non-experimental but a systematic review of teaching materials presented to a targeted patient population	Personal goal of attainment by Immogene King	13 studies in a literature review	database literature review and patient one-on-one interview; didn't state how many patients were interviewed	glaucoma patients	The authors concluded that after revising and compiling some the taching materials, the readability was on an 11th grade educational level which was too high for the patient population who displayed low health literacy characteristics.
Pratt & Searles	2017	Using visual aids to Enhance Physician-Patient discussions and Increase Health Literacy	self-care theory	*Cutaneous surgery and medicine*	Low health literacy is a barrier to patient-physician communication and some patients may have to rely on multple modalities to comprehend a topic	Review of a retrospective study	Level III non-experimental but a systematic review of teaching materials presented to a targeted patient population	B.F.Skinners theory of conditional learning to change behavior. Imagery association with key concepts can improve recall of items.	no stated sample size	The created template was given to patients discussing medication indications and adverse	Patients using Isotretinon medication	Including visual aids to patient teaching could improve health outcomes and reduce health care cost by focusing on improving health literacy. Picture icons were more favorable in the elderly population
Dols, Chargualaf, Gordon, Pomerleau, Mendoza, Schwarzbach, & Gonzalez	2020	Relationship of Nurse-Led Education Interventions to Liver Transplant Early Readmission	self-care theory	*Sage Journals*	Readmissions post-operatively can increase the patients mortality rate which can be related to complex patient teaching, health literacy, and cultural practices.	A correlational study with a convenience sample	Level I RCT study for liver patients 18 years and older	Dorothy Orem self-care theory which looks at the theory all patients want to learn how to manage their care.	total of 86 post-transplant liver patients	35 liver transplant patients received the new teaching and 53 post-transplant liver patients received the old patient teaching	The study had more female than male subjects in a Hispanic adult population with an average age of 49 to 65 years old who had a calculated Model for End-Stage Liver Disease (MELD) score of 31 or greater	The authors concluded that patients shown improvement with the nurse led education program that focused on multimodal individualized patient teaching written on a second grade educational level. The study showed that structure and consistency in the teaching being done helped reduce readmissions by 16.3% in 1 year.
Landis	2020	Think Health Literacy to Improve The Patient Experience	Self-care theory	*Holistic Nursing Practice*	Nurses can make an impact in the patient and families view of the healthcare system through utilizing good commuication skills. There has been a correlation between health literacy and poor outcomes. It's the healthcare professionals job to make sure the patient thoroughly understands their plan of care in plain simple language.	Descriptive-narrative opinion by the author	Level IV-focused on health literacy through improving provider-patient education to support positive outcomes.	Dorothy Orem self-care theory.	N/A	N/A	N/A	Active listening and good communication with the patient and family can improve outcomes and shared decision making with the plan of care. If the patient feels they are heard and part of the decision making process, they are more likely to adhere to the treatment plan and it is the duty of the healthcare professional to make sure the patient is well informed and taught on their level of learning.

Appendix C

Quality Improvement/Program Evaluation Self-Certification Tool

Below is a summary of your responses Download PDF

Quality Improvement/Program Evaluation Self-Certification Tool

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

Instructions:
Please complete the requested project information, as this document may be used for documentation that IRB review is not required. Select the appropriate answers to each question in the order they appear below. Additional questions may appear based on your answers. If you do not receive a STOP HERE message, the form may be printed as certification that the project is "not research", and does not require IRB review. The IRB will not review your responses as part of the self-certification process. For projects being done at Vidant Health, site support will be required. Please email crg.quality@vidanthealth.com to obtain site support from Vidant Health.

Name of Project Leader:

Dr. Tracy Bell

Project Title:

Multimodal educational pathways for patients who receive urological robotic-assisted procedures

Brief description of Project/Goals:

The project goal is to assess patient literacy to help prevent or reduce postoperative readmissions and adverse outcomes such as surgical site infections, improper care of foley drainage, and inadequate diversionary appliance for urostomies. This list is not all-inclusive of postoperative complications, but the goal is to use multiple teaching modalities such as visual aids, written materials, or listening to audio components of patient teaching materials to help improve patient knowledge and self-care during their postoperative period.

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

- ○ Yes
- ● No

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

- ○ Yes
- ● No

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

- ○ Yes
- ● No

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

- ○ Yes
- ● No

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

- ○ Yes
- ● No

Based on your responses, the project appears to constitute QI and/or Program Evaluation and IRB review is not required because, in accordance with federal regulations, your project does not constitute research as defined under 45 CFR 46.102(d). If the project results are disseminated, they should be characterized as QI and/or Program Evaluation findings. Finally, if the project changes in any way that might affect the intent or design, please complete this self-certification again to ensure that IRB review is still not required. Click the button below to view a printable version of this form to save with your files, as it serves as documentation that IRB review is not required for this project. 8/1/2021

Appendix D

Project Questionnaire

Date: _____ Last 5 digits of MR#: _____ Procedure: _____

Age: _____ Male: _____ Female: _____ Readmit:_____ Complication: _____

1. How often do you have difficulty understanding discharge or procedure instructions given to you by your healthcare provider?

   ( )Always ( )often ( )Sometimes ( ) Occasionally ( )Never

2. How often do you have trouble reading or completing printed medical forms?
   ( ) Always ( )Often ( ) Sometimes ( ) Occasionally ( ) Never

3. How often do you have trouble understanding how to take your medication or what the medication is used for?

   ( ) Always ( ) Often ( ) Sometimes ( ) Occasionally ( ) Never

4. How often do you take a family member or friend with you to the doctor to help you read the forms you receive?

   ( ) Always ( ) Often ( ) Sometimes ( ) Occasionally ( ) Never

5. How often do you have difficulty understanding printed education material provided by your healthcare provider?

   ( ) Always ( ) Often ( ) Sometimes ( ) Occasionally ( ) Never

6. How often do you have to read Printed materials more than once to get a good understanding of what it is telling you or asking you?

   ( ) Always ( )Often ( ) Sometimes ( ) Occasionally ( ) Never

This question was asked at the end of the questionnaire:

Did you find these teaching materials written higher than an eighth-grade level? Y/N

Did this make it difficult for you to understand what the material was telling you? Y/N

Totals: ____Always ____Often ____Sometimes ____Occasionally ____Never

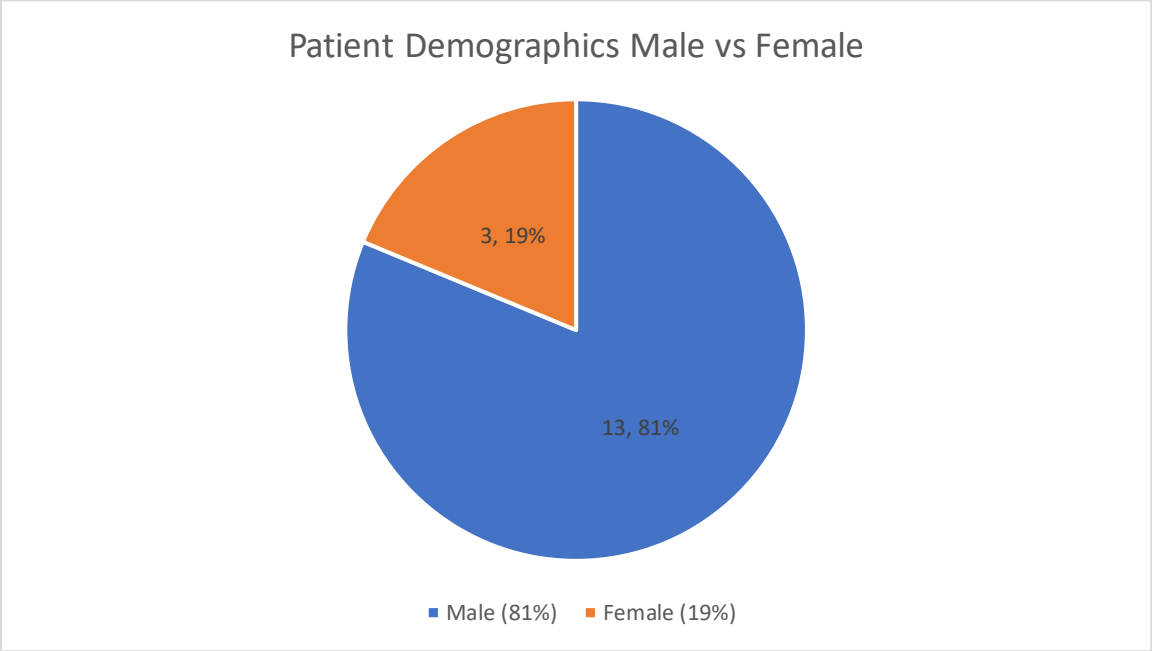
Appendix E

Data Collection Tool

MR #	M/ F	Limited health proficiency determined by question # 4,9, or 12 Y/N	Teaching was done prior to procedure Y/N	Teaching documented in EHR Y/N	Experienced post-op complication Y/N	What was the post-op complication?	Was the patient readmitted to the hospital? Y/N	Did the patient receive a pre-surgical phone call learning needs screen? Y/N	Did the patient receive a post-surgical phone call learning needs screen? Y/N	Did the patient find the postop phone call beneficial as an additional learning opportunity? Y/N

Appendix F

Patient Demographics



- 13 males with ages ranging from 47-89 years old makes up 81% of population
- 3 females with ages ranging from 74-88 years old makes up 19% of population
- The median patient age is 69 years-old for the total population

Appendix G

Patient's Response to Project Questionnaire (n=16)

Question	# Patients who answered Always, Often, or Sometimes	Percentage	# Patients who answered Never	Percentage
1. Difficulty understanding discharge/procedure instructions	2	13%	14	88%
2. Difficulty completing printed medical forms	4	25%	12	75%
3. Difficulty understanding medications and indication	5	31%	12	75%
4. Take a family member/friend to help out at appointments	8	50%	8	50%
5. Difficulty understanding printed education materials	4	25%	12	75%
6. Have to read printed materials more than once to understand	13	81%	3	19%

Final Question: Yes/No response

Question	# Of Yes responses	Percentage	# Of No responses	Percentage
7. Were the materials written in an easy-to-read format	13	81%	3	19%

Appendix H

Data Collection Tool Follow-up Results

Question	Yes	%	No	%
1. Limited health proficiency determined	13	81	3	23
2. Teaching prior to procedure	16	100	0	-
3. Documentation in the EHR	16	100	0	-
4. Experienced postop complication	2	12	14	87
5. Patient readmitted to the hospital or ED visit	2	12	14	87
6. Received learning needs screen before or after surgery	16	100	0	-
7.Received postop follow-up screen	12	75	*4	25
8.Find postop follow-up beneficial	12	75	*4	25

***additional note: Four out of 16 patients were not able to participate in the postop follow-up due to not able to reach by phone after several attempts, so they were classified as a no response.*

Appendix I

Actual Budget

Quantity	Description	Unit Price	Total
1	Nurse (role of project coordinator)	$0/hr. x 4	$0.00
25	Patient Education Packet (printshop cost)	$7.50 ea.	$187.50
1	Phone service (used personal cell phone)	$150.00	$150.00
1	Computer (used personal computer)	$0.00	$0.00
	Total Due		$337.50

Appendix J

Projected Annual Budget

Quantity	Description	Unit Price	Total
1	Nurse (RN or LPN with RN oversight)	$30hr x 40	$1,200/ wk. or $62,400/yr.
200	Patient Education Packet (printshop cost)	$7.50 ea.	$1,500
1	Phone service	$150/mo.	$1800/yr.
1	Computer (laptop) with protected encryption for HIPPA compliance	$1200	$1200
	Total Due		**$66,900**

Appendix K

Project Timeline

9/7/21 Have phone conference meeting with project site champion regarding last minute implementation details

9/23/21: Touch base with project site champion to make sure no changes have occurred so that implementation could begin on 10/1/21

9/24/21: Meet with project site department that the project will be implemented to discuss housekeeping items and project steps and outcomes

10/11/21: Go to project site to start implementation and f/u with staff on implementation

10/12/21: spend day at project site to monitor implementation of project and make revision with site feedback. Touch base with project site champion to assess implementation after first week. Weekly data collection preferably face to face but if not via phone.

10/14/21: Spend day at project site to monitor progress of implementation of project. Touch base with project site champion for implementation feedback face to face. Weekly data collection.

10/21/21: Spend day at project site to monitor progress of implementation of project. Touch base with project site champion for implementation feedback face to face. Weekly data collection.

10/29/21: Spend day at project site to monitor progress of implementation and touch base with project site champion for feedback face to face. Weekly data collection.

11/1/21: Start Bi-weekly Data collection.

11/2/21: Spend day at project site to monitor progress of project implementation

11/4/21: Spend day at project site to monitor progress of project implementation, speak with project site champion regarding project progress since PDSA revision.

11/9/21: Spend day at the project site to monitor progress of project implementation.

11/11/21: Spend the day at the project site to monitor project implementation progress, speak with site champion face to face regarding project progress

11/17/21: Spend the day at the project site to monitor progress of project implementation

11/18/21: Spend the day at the project site to monitor project progress, speak with site champion face to face and collect data.

11/24/21: Spend day at the project site to monitor progress of project implementation

12/1/21: Spend the day at the project site to monitor project progress

12/2/21: Spend day at project site, speak with site champion to discuss project data findings.

12/7/21: Spend day at project site doing patient teaching, completing learning needs assessment, and completing data collection tool.

12/9/21: Spend day at project site doing patient teaching, completing learning needs assessment, and completing data collection tool.

12/14/21: Spend day at project site doing patient teaching, completing learning needs assessment, and completing data collection tool.

12/17/21: This is the last day of project implementation. Half-day was spent at the project site to discuss completion of the implementation phase with the project site champion doing a debriefing session on project findings, process changes, what worked well, and improvements.

Appendix L

Doctor of Nursing Practice Essentials

	Description	Demonstration of Knowledge
Essential I ***Scientific Underpinning for Practice***	**Competency** – Analyzes and uses information to develop practice **Competency** -Integrates knowledge from humanities and science into context of nursing **Competency** -Translates research to improve practice **Competency** -Integrates research, theory, and practice to develop new approaches toward improved practice and outcomes	This essential was met by utilizing research to improve practice and develop new approaches to improved practice outcomes by implementing an education initiative for urology surgical patients.
Essential II ***Organizational & Systems Leadership for Quality Improvement & Systems Thinking***	**Competency** –Develops and evaluates practice based on science and integrates policy and humanities **Competency** –Assumes and ensures accountability for quality care and patient safety **Competency** -Demonstrates critical and reflective thinking **Competency** -Advocates for improved quality, access, and cost of health care; monitors costs and budgets **Competency** -Develops and implements innovations incorporating principles of change **Competency** - Effectively communicates practice knowledge in writing and orally to improve quality **Competency** - Develops and evaluates strategies to manage ethical dilemmas in patient care and within health care delivery systems	This essential was met by utilizing effective communication with the project group to meet the goals of the project and realizing that a PDSA was needed during project implementation to improve data outcomes. This process focused on critical thinking and taking a leadership role during the project implementation.
Essential III ***Clinical Scholarship & Analytical Methods for Evidence-Based Practice***	**Competency** - Critically analyzes literature to determine best practices **Competency** - Implements evaluation processes to measure process and patient outcomes **Competency** - Designs and implements quality improvement strategies to promote safety, efficiency, and equitable quality care for patients **Competency** - Applies knowledge to develop practice guidelines **Competency** - Uses informatics to identify, analyze, and predict best practice and patient outcomes **Competency** - Collaborate in research and disseminate findings	This essential was met by reviewing best practices for quality improvement surrounding patient outcomes. Project dissemination to university faculty and peers during presentation day will support patient safety by reducing postoperative complications.
Essential IV ***Information Systems – Technology & Patient Care Technology for the Improvement &***	**Competency** - Design/select and utilize software to analyze practice and consumer information systems that can improve the delivery & quality of care **Competency** - Analyze and operationalize patient care technologies **Competency** - Evaluate technology regarding ethics, efficiency and accuracy	This essential was met because information technology was used during literature search and accessing the organization's EHR to collect

Transformation of Health Care	**Competency** - Evaluates systems of care using health information technologies	patient data from a detailed provider and staff notes.
	Description	**Demonstration of Knowledge**
Essential V ***Health Care Policy of Advocacy in Health Care***	**Competency**- Analyzes health policy from the perspective of patients, nursing and other stakeholders **Competency** – Provides leadership in developing and implementing health policy **Competency** –Influences policymakers, formally and informally, in local and global settings **Competency** – Educates stakeholders regarding policy **Competency** – Advocates for nursing within the policy arena **Competency**- Participates in policy agendas that assist with finance, regulation and health care delivery **Competency** – Advocates for equitable and ethical health care	This essential was met by focusing on the DNP student's role in advocating for improved patient education initiatives for a low literacy community to improve healthcare disparities and participate in knowledge sharing with the patient and family.
Essential VI ***Interprofessional Collaboration for Improving Patient & Population Health Outcomes***	**Competency**- Uses effective collaboration and communication to develop and implement practice, policy, standards of care, and scholarship **Competency** – Provide leadership to interprofessional care teams **Competency** – Consult intraprofessionally and interprofessionally to develop systems of care in complex settings	This essential was met by intraprofessional and interprofessional collaboration with my project facilitator, project site champion, provider, and staff regarding project outcomes.
Essential VII ***Clinical Prevention & Population Health for Improving the Nation's Health***	**Competency**- Integrates epidemiology, biostatistics, and data to facilitate individual and population health care delivery **Competency** – Synthesizes information & cultural competency to develop & use health promotion/disease prevention strategies to address gaps in care **Competency** – Evaluates and implements change strategies of models of health care delivery to improve quality and address diversity	This essential was met by synthesizing the data received from this project to improve health promotion and disease prevention through patient teaching. The project focus was on reducing postoperative complications and assessing health literacy to reduce gaps in care.
Essential VIII ***Advanced Nursing Practice***	**Competency**- Melds diversity & cultural sensitivity to conduct systematic assessment of health parameters in varied settings **Competency** – Design, implement & evaluate nursing interventions to promote quality **Competency** – Develop & maintain patient relationships **Competency** –Demonstrate advanced clinical judgment and systematic thoughts to improve patient outcomes **Competency** – Mentor and support fellow nurses **Competency**- Provide support for individuals and systems experiencing change and transitions	This competency was met by implementing an education initiative led by an advanced nursing practice student to improve patient outcomes.

	Competency –Use systems analysis to evaluate practice efficiency, care delivery, fiscal responsibility, ethical responsibility, and quality outcomes measures	