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## Pre-Admission Patient Education for a Prostatectomy Enhanced Recovery After Surgery Pathway

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PRE-ADMISSION PATIENT EDUCATION FOR A PROSTATECTOMY ENHANCED  
RECOVERY AFTER SURGERY PATHWAY

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### Abstract

**Background:** In the United States, prostate cancer is the most common cancer diagnosed in men and a common treatment choice is a radical prostatectomy. The Enhanced Recovery After Surgery® Society developed evidence-based guidelines to optimize treatment and improve outcomes in prostatectomy patients, yet not all hospitals are utilizing these guidelines or employing all of the elements, including pre-admission education. **Purpose and Objectives:** The purpose of this quality improvement project was to develop, implement, and evaluate a pre-admission patient education component for a prostate surgery pathway based on the Enhanced Recovery After Surgery guidelines. Objectives included assessing the nurse's intention to use the tools and the patients' perception of satisfaction with the education. **Methods:** The project leader collaborated with physicians, nurses, information technology, and other stakeholders to develop, implement, and evaluate the prostatectomy pre-admission education component of the ERAS pathway at a large southeastern hospital. Components of the education portion of the pathway include a bi-lingual patient prostate surgery education book, a patient surgery checklist, and a nurse teaching tool. **Results:** Survey findings showed that 100% of patients participating in the ERAS prostatectomy teaching visit with the nurse received the new education book and rated the visit as satisfied or highly satisfied. **Implications for Practice:** Completing a comprehensive patient education component for a prostate ERAS pathway can lead to pre-admission nurses delivering consistent education to patients preparing to undergo prostatectomy surgery. The role of the Doctor of Nursing Practice leader working with the interdisciplinary team was instrumental in completing this project.

*Keywords:* pre-admission patient education, prostate surgery, patient education material, enhanced recovery after surgery (ERAS), preoperative education



## **Pre-Admission Patient Education for a Prostatectomy Enhanced Recovery After Surgery Pathway**

In the United States, prostate cancer is the most common cancer diagnosed in men, and there were an estimated 174,650 new cases diagnosed in 2019, with approximately 31,620 deaths (Siegel et al., 2019). In North Carolina, around 7,000 cases of prostate cancer are diagnosed annually, and the number increases each year (State Center Health Statistics, 2020). Surgery is a common treatment choice for prostate cancer and robotic-assisted laparoscopic radical prostatectomy (RALP) is often utilized with prostate cancer patients (Lv et al., 2020; Wang et al., 2019). Approximately 25% of all patients undergoing surgery will have some type of complication (Ljungqvist, 2020) and the postoperative complication rate related to RALP is 6.8% (Simmons et al., 2016). Complications seen after RALP may consist of cardiac disorders, deep vein thrombosis (DVT), ileus, and others. A decreased rate of complications has been shown to reduce the average length of hospital stay, as well as decrease the cost of hospitalization (Xu et al., 2020). Pre-admission patient education is imperative so that patients can be involved in their care before and after surgery (Burch & Balfour, 2020; Lv et al., 2020).

Postoperative complications such as ileus, as well as postoperative nausea and vomiting (PONV), can be attributed to the surgical stress response and has the potential for serious adverse outcomes; this led to the development of enhanced recovery guidelines (Kehlet & Dahl, 2003). The concept of enhanced recovery combines preoperative education, health optimization, improved nutrition, and mobilization, which may decrease the surgical stress response (Kehlet & Dahl, 2003). A person undergoing a prostatectomy is subject to systemic changes because of the surgical stress response which relates to insulin sensitivity of cells and the metabolic response impacting the breakdown of proteins in the body (Schricker et al., 2020). Physiological effects

resulting from the stress response range from muscle wasting, retention of fluid, increased cardiac output, to an increase in oxygen consumption (Gillis & Wischmeyer, 2019), and may decrease by applying enhanced recovery guidelines (Schricker et al., 2020).

### **Enhanced Recovery After Surgery**

Enhanced recovery guidelines are a series of evidence-based interventions implemented by a multidisciplinary healthcare team to optimize perioperative treatment and expedite recovery without increasing complications (Ljungqvist, 2020). The Enhanced Recovery After Surgery (ERAS) pathway was developed to optimize perioperative treatment, address the surgical stress response, and standardize medical care (Ljungqvist, 2020; Lv et al., 2020). There are 24 ERAS® Society evidence-based guidelines developed for numerous specialties including urologic procedures. Lau and Chamberlain (2017) assert that implementing these guidelines may decrease some postoperative complications. The multifactorial guidelines for prostate surgery consist of 22 recommended elements (Table 1) for preoperative, intraoperative, and postoperative phases of care (Crettenand et al., 2020).

One key element of the ERAS preoperative pathway includes preoperative patient education, as the evidence demonstrates that appropriate education promotes patient involvement in their recovery (Burch & Balfour, 2020), which may improve clinical outcomes by decreasing the rate of complications (Klaiber et al., 2018). Surgical patients who participate in preoperative education have demonstrated increased knowledge about the process, reduced anxiety, improved satisfaction (Waller et al., 2015), and reduced pain (Kim et al., 2020).

### **Microsystem Assessment**

The DNP project leader conducted a microsystem assessment at a corporate patient education department in a large healthcare system. The not-for-profit healthcare system is

**Table 1***Recommended Prostatectomy ERAS Interventions*

ERAS Interventions	Details
1 Education and counseling	Review the process from surgery decision to recovery
2 Optimal health	Obtain and maintain optimal health
3 Bowel prep	Avoid oral mechanical
4 Fasting	Solid fast 6 hrs and fluid fasts 2 hrs before surgery
5 Carbohydrate drink	The night before and 2-4 hours before surgery
6 Pre anesthesia medication	Pharmacological anxiety management
7 DVT prevention	Consider low-molecular-weight heparin
8 Analgesia	Non-opioid
9 Approach	Consider the least invasive approach
10 Use of drain	Limit use
11 Prophylaxis and Skin prep	Preoperative antibiotic and antimicrobial shower
12 Anesthesia protocol	Standard anesthetic protocol
13 Fluid management	Limit intraoperative and postoperative IV fluids
14 Warming	Prevent intraoperative hypothermia
15 Nasogastric tube	Avoid
16 Urinary catheter	Monitor length of use
17 Prevent ileus	Control IV fluids, early ambulation, and oral hydration
18 Prevent PONV	Interventions to prevent nausea and vomiting
19 Pain control	Avoid opioids
20 Early mobility	Sit-up in bed, begin ambulating shortly after surgery
21 Early oral intake	Promotes return of bowel function
22 Audit	Review of the ERAS process

*Note.* Adapted from “ERAS for major urological procedures: Evidence synthesis and recommendations,” by F. Crettenand, P. Martel, I. Lucca, S. Daneshmand, and Y. Cerantola, 2020, In O. Ljungqvist, N. K. Francis, & R. D. Urman (Eds.), *Enhanced Recovery After Surgery (ERAS®): A complete guide to optimizing outcomes* p. 423 (<https://doi.org/10.1007/978-3-030-33443-7>). Copyright 2020 by Springer International Publishing.

comprised of nearly 700 medical group locations, 15 medical centers, and numerous outpatient facilities with physician clinics in North Carolina, South Carolina, and Virginia. The quality improvement project, initiated in the patient education department, took place at a surgical wellness clinic inside one of the hospitals within the organization.

The patient education department, located in a medium-sized southeastern city in the

United States, produces, manages, and has responsibility for all patient education resources within the organization. The purpose of the patient education department is to increase nurses' awareness of the educational resources, increase utilization, expand access points, develop new educational material, inform team members of available resources, and improve patient comprehension while incorporating best practices. The department also handles requests for integration of patient education into the electronic health record (EHR).

The department consists of a baccalaureate-prepared nurse, a master's prepared nurse, a media specialist, and a master's prepared health administrative manager who all report to a doctorally prepared nurse who serves as the department director. Patient education, which has responsibility for creating education material needed for patients throughout the healthcare system, reports to corporate clinical and patient education. The nurses in the patient education department are content experts who provide evidence-based patient education resources that follow best practice initiatives, enhance quality and safety by increasing awareness of the education resources, optimize EHR documentation of education delivered, and update patient education material to improve patient comprehension.

The surgical wellness clinic is a high utilizer of education products produced and maintained by the patient education department. It is located within one of the 15 hospitals in the organization, with 14 pre-admission nurses and a receptionist that reports to the manager of surgical services. The pre-admission nurses process up to 160 patient appointments each day, which includes a 30-minute nurse-patient teaching session.

After completing a microsystem assessment, the project leader identified that prostatectomy surgery following the ERAS pathway was being performed at one of 15 hospitals within the organization and that nurses in the surgical wellness clinic at that metropolitan

hospital are responsible for preoperative teaching related to the prostatectomy ERAS pathway. The nurses did not have the appropriate education materials or the training to provide specific education for patients who underwent a prostatectomy. Creating patient education material and instructing the pre-admission nurses on delivery is the responsibility of the patient education department in collaboration with the multidisciplinary surgical services team.

The ERAS pathway for RALP is managed by the collaboration of the urology surgeon(s), anesthesiologist(s), and nurses. At the targeted hospital, many elements of the prostatectomy ERAS pathway including the perioperative and postoperative initiatives were implemented in 2019, but the preoperative patient education component, which should include patient expectations from the time of the surgery decision through recovery, had not been fully developed or executed. The surgeon manages initial patient counseling on diagnosis and options, surgical approaches, and postoperative care. The anesthesiologist directs preoperative fasting, carbohydrate loading, intraoperative and postoperative fluids, and prevention of PONV. Patients preparing for RALP are initially educated in the office by the surgeon utilizing the ERAS pamphlet, then the ERAS education components are reinforced during a 30-minute in-person pre-admission visit with a nurse; however, the ERAS pamphlet contained general information not directly related to prostate surgery. This pamphlet was utilized in the surgical services clinic for patient teaching in the absence of a comprehensive prostate ERAS patient education book. Follow-up telehealth appointments are scheduled as needed so that the pre-admission nurses can reinforce patient teaching.

The project leader identified that the pre-admission nurses who work in the surgical wellness clinic provide patient teaching for patients who will undergo a prostatectomy during a 30-minute pre-admission visit. The pre-admission nurse provides these patients with a brief

generalized pamphlet on ERAS that is used to guide the nurse-patient education session. This guide did not contain specific details related to prostate surgery, such as discharging with a foley catheter in place. Based on the project leader's observations and discussions with the pre-admission nurses, the lack of specific prostatectomy education often resulted in a variation in the information given on drains and catheters. Furthermore, not all pre-admission nurses used the pamphlet, and details on the expectations regarding the surgery process were not consistently provided because standardized prostate surgery education and written materials were insufficient.

In addition to patient teaching, the pre-admission nurse is responsible for verifying that the patient is assigned to the ERAS pathway and assuring that documentation occurs within the EHR by checking the ERAS alert flag. Knowing which patients are assigned to the ERAS pathway assists each healthcare team member in the continuum of care by providing appropriate ERAS care and education. A report reviewed on the ERAS notation indicated that this designation in the EHR was inconsistent. When the patient was not notated as an ERAS pathway patient, the nurses were unaware of the need to educate on the ERAS guidelines before the surgery, unless the information was contained elsewhere within the EHR.

The project leader conducted a strength, weakness, opportunity, and threat (SWOT) analysis to identify factors that might have promoted or hindered the development and implementation of the prostate surgery education component for the ERAS pathway (see Table 2). The strengths of the program included that most components of the ERAS pathway (except for patient education) had been developed and implemented and that the surgeons and anesthesiologists followed the pathway. Another strength was that in-person patient education visits with the nurse at the surgical services clinic were already occurring, so the opportunity for

improved in-person patient education existed.

**Table 2**

*SWOT Analysis for Prostatectomy ERAS Education*

Strengths	Weaknesses	Opportunity	Threats
Prostate ERAS pathway in use with surgeons & anesthesia	Cost of printing and translating material	Create teaching points to deliver patient education	Pandemic may delay delivery of educational material from print vendor
Patients meet with nurse for pre-admission visit	Inconsistent teaching without comprehensive patient education program	Develop patient education material - print & digital book, ERAS patient checklist	Stakeholders with competing priorities during Covid-19 pandemic
Teaching tools currently available are used	Reliance on ERAS flag in EHR to identify patients	Present an in-service to pre-admission nurses	Competing organizational initiatives

A significant weakness in ERAS education was that consistent comprehensive patient education tools such as a printed book and a standardized process to deliver ERAS prostate surgery education did not exist. A system weakness within the patient education component of the program encompassed reliance on the pre-admission nurse consistently notating ERAS in the EHR to identify the ERAS patients, followed by adding a patient teaching note in the chart which was not part of the written guidelines for the surgical wellness clinic. Other factors considered include the cost of the print book, which is an average of \$3 per print copy and up to \$4,000 to translate the book into Spanish.

Opportunities for improvement included patient education's expertise and commitment to develop the written patient education material for prostate surgery, to set standard expectations for teaching, and to educate pre-admission nurses about how to consistently communicate the teaching. One threat noted is the Covid-19 pandemic; however, it was not a significant barrier in the development or delivery of the education material to the pre-admission nurses. Another threat

was related to partial or lack of involvement of some key stakeholders. Although there was limited engagement by the surgical services manager during the planning phase due to other organizational priorities, the manager expressed interest in contributing to the development of prostate education content.

Patients that underwent prostate ERAS surgery at the targeted hospital between December 1, 2019, and November 30, 2020, ranged in age from 43 to 76 years, with a mean age of 59.4 years, and over 70% of the patient population self-identified as White, while 18.2% self-identified as Black; only 6.8% of patients reported that they were of Hispanic/Latino ethnicity. Additional details related to patient characteristics including payor source are outlined in Table 3.

**Table 3**

*ERAS Prostatectomy Patient Characteristics*

Characteristics	<i>N</i> = 44
	<i>n</i> (%)
Age (years)	
49 and under	5 (11.4)
50-59	16 (36.4)
60-69	21 (47.7)
70 and over	2 (4.5)
Race	
Black	8 (18.2)
Other	2 (4.5)
Unknown	3 (6.8)
White	31 (70.4)
Ethnicity	
Hispanic	3 (6.8)
Non-Hispanic	38 (86.4)
Unknown	3 (6.8)
Payor source	
Medicare	5 (11.4)
Private Insurance	39 (88.6)



### **Statement of the Problem**

The project leader identified the following problem: the ERAS preoperative patient education component for persons undergoing a prostatectomy was not created when the guideline was implemented in 2019. Furthermore, the pre-admission nurses have not received standard instruction that includes pre-admission teaching guidance for patients undergoing a prostatectomy following the ERAS pathway. Pre-admission nurses in the surgical wellness clinic expressed enthusiasm about the prospect of having standardized prostate education.

This quality improvement project had two specific aims: (a) create a pre-admission education book for patients undergoing a prostatectomy, and (b) develop a method for pre-admission nurses to consistently teach the material. Achievement of these aims will fulfill the missing patient education component of the ERAS prostatectomy pathway. Developing the pre-admission education program for prostate surgery should lead to a standardized comprehensive pre-admission patient education program, and to increased patient satisfaction with pre-admission education received.

### **Objectives**

The objectives of this evidenced-based quality improvement project consisted of:

1. Develop a patient-specific prostate surgery book (printed copy and digital format in English and Spanish) with multidisciplinary team input and approved by the patient education nurse director by end of March 2021.
2. Create a prostate surgery ERAS patient checklist to summarize the ERAS prostatectomy preoperative patient instructions by the first week of March 2021.
3. Develop a nurse teaching tool for nurses to guide consistent education, by March 2021.

4. Educate 90% of pre-admission nurses on the patient education component for patients undergoing an ERAS prostatectomy, including the prostate surgery book, ERAS patient checklist, and topics to be covered during the 30-minute patient visit by end of March 2021.
5. Educate 100% of patients scheduled for prostate surgery on the ERAS pathway for prostatectomy using the prostate surgery book during the 30-minute teaching visit with a pre-admission nurse within two weeks of their scheduled surgery.
6. Supply 100% of patients who consent to an ERAS RALP with the print or digital format of the prostate book (at the time of the pre-admission nurse/patient education session).
7. Assess patient satisfaction with the teaching provided among 90% of patients who receive the ERAS prostatectomy pre-admission teaching visit by June 10, 2021, through a patient survey.

### **Review of Evidence**

#### **ERAS Pathway**

Healthcare organizations implement ERAS pathways to improve outcomes by decreasing complications and length of stay (Kehlet, 2020; Lin et al., 2019; Ye et al., 2020; Zhao et al., 2020). Each aspect of the ERAS guideline relates to improved patient outcomes, and the first section of the evidence-based guidelines focuses on the patient education component that occurs during the preoperative phase of the guideline (Cavallaro et al., 2018; Crettenand et al., 2020). The education about ERAS begins in the preoperative phase where the patient is educated about the surgery and a series of interventions such as early ambulation, hydration, early diet, control of PONV, and pain control are explained in detail (Cavallaro et al., 2018; Crettenand et al., 2020).

Knowing and optimizing the health history of the patient before surgery plays an important role in the surgical outcomes of ERAS patients (Crettenand et al., 2020). Health behaviors encouraged to optimize health before surgery include smoking cessation, decreased alcohol consumption, improved blood glucose control in diabetes, and optimal blood pressure control (Crettenand et al., 2020). Nutritional health is also an area not to be ignored by the provider because supplements may be necessary since preoperative fasting is not best for the overall health of the patient (Crettenand et al., 2020). To ensure safe intubation, guidelines established a six-hour fast before surgery, discontinuing clear fluids two hours before surgery, and consuming a prescribed carbohydrate-loading drink two to four hours before anesthesia (Crettenand et al., 2020).

The perioperative phase of the ERAS guidelines recommends restricting intravenous fluid given in surgery because this may lead to fluid overload and result in complications (Crettenand et al., 2020). It is important to keep a constant body temperature to minimize the stress response during surgery (Crettenand et al., 2020). Many complications occur in the postoperative phase; therefore, the patient should be monitored. The guidelines recommend early ambulation, starting nutrition before return of bowel sounds, and removing drains and catheters early in the postoperative period to decrease the risk of ileus, and control PONV (Crettenand et al., 2020).

Numerous studies compared prostatectomy ERAS to conventional prostatectomy surgery (Huang et al., 2018; Lin et al., 2019; Lv et al., 2020; Sugi et al., 2017; Xu et al., 2020; Ye et al., 2020; Zhao et al., 2020). Several themes emerged in the reviewed studies that include components of the ERAS guidelines based on elements originally published by Kehlet & Dahl (2003). Similar themes included preoperative education, preoperative fasting, preoperative bowel

prep, postoperative mobility, postoperative pain medication, and postoperative diet. The studies had comparable outcomes for the length of stay in days, time to ambulation, time to first flatus, time to defecate, and time to drain removal (Huang et al., 2018; Lin et al., 2019; Sugi et al., 2017; Xu et al., 2020; Ye et al., 2020; Zhao et al., 2020).

Several studies mentioned that the cost of hospitalization was reduced after the implementation of ERAS, but these studies did not consider the cost of the surgery (Lin et al., 2019; Xu et al., 2020). Specifically, Lin et al. (2019) reported an average cost reduction of \$1,100 when comparing ERAS to conventional surgery pathways, and Xu et al. (2020) reported a reduction of over \$1,400 when applying the ERAS pathway. Data from studies on complete ERAS guidelines implementation may convince more hospitals to adopt ERAS guidance.

### **ERAS Pre-Admission Patient Education**

Preoperative education plays an important role in getting patients involved in setting their recovery goals as they work with the healthcare team (Burch & Balfour, 2020). Allowing the patient to work with the healthcare provider to set goals can motivate the patient to stay on track in their recovery process. The education and counseling conveyed to patients by healthcare teams have been shown to decrease anxiety and lead to a reduced average length of stay (Huang et al., 2018). The pre-admission time is important to provide additional education and reminders as the patient prepares for discharge. Providing preoperative patient education for prostate surgery has a positive effect on long-term satisfaction rates (Klaiber et al., 2018; Kretschmer et al., 2017) and may lead to a decrease in some postoperative complications, such as pneumonia and DVT (Huang et al., 2018; Klaiber et al., 2018; Lin et al., 2019). The patient education created includes a summary of the process in the form of a checklist to facilitate patient engagement during the surgical journey.

Preoperative education is important because providing too little information or too much may increase anxiety for patients undergoing surgery (Wongkietkachorn et al., 2018). Surgical patients need clear and concise directions when preparing to undergo surgery. An important role of nurses is to educate patients. Effective patient education can optimize patient outcomes and encourage participation in the recovery process (Wongkietkachorn et al., 2018).

### **Components of Patient Education**

Patient participation in the recovery process supported by healthcare providers during the pre-admission phase encourages the patient to be proactive in their recovery (Poland et al., 2017). During the pre-admission phase it is important to assess the learning style of the patient, then choose the preferred method or methods based on the patient preference (Wongkietkachorn et al., 2017). Components of patient education can consist of one or a combination of print, digital, verbal, and a virtual or in-person visit to increase the accessibility to education.

Digital access to patient education can be a beneficial adjunct to the traditional method of providing printed education (Gordon & Hornbrook, 2018). Understanding how individuals use various types of media guides the decision to create multimodal methods for patient education delivery (Huber et al., 2013; Poland et al., 2017). Gordon and Hornbrook (2018) reported that older Black, Latino, and Filipino individuals preferred health advice verbally and would require assistance to navigate through digital modalities. Individuals 65 years and older have less experience with digital technology, which could lead to greater disparities in health outcomes and healthcare access if they have difficulty accessing digital information (Gordon & Hornbrook, 2018). Although there has been increased usage of digital media among individuals 65 years and older leading to increased use of multimodal methods for providing patient education (Anderson & Perrin, 2017), we need to be aware of potential challenges.

Verbal patient education works best when using culturally appropriate eye contact and by paying attention to both verbal and non-verbal communication of the patient (Flanders, 2018). Face-to-face and other forms of verbal education encourage patient participation by allowing the educator to adjust the approach to meet the patients' education needs (Flanders, 2018). Poland et al. (2017) reported that multimodal pre-admission education facilitates patient participation as patient confidence is promoted through a partnership with the healthcare provider. The in-person visit with the pre-admission nurse not only creates a trusting relationship but also assists the patient in preparing for surgery by helping to set realistic goals (Burch & Balfour, 2020). Scripted standardized patient education has demonstrated improvement in patient participation and outcomes; thus, it would be beneficial for the healthcare provider to utilize consistent education (Cavallaro et al., 2018).

## **Methodology**

### **Synopsis of Needs Assessment**

The comprehensive pre-admission education component of the ERAS pathway for patients preparing to undergo prostate surgery had not been developed or implemented. The main anesthesia group at the designated hospital began implementing components of the ERAS pathways for specific surgeries supported by their team. The patient education component for each of those surgeries had been developed at the time that the other respective surgical pathways were implemented, however, there was a delay in implementing the prostate patient education. Although the prostate surgery pathway was implemented in 2019, the education component was not developed.

The DNP project focused on developing and implementing comprehensive ERAS patient education materials for the preoperative phase of the prostatectomy surgery pathway. It is

important to use fully developed education material and to have nurses communicate that education consistently to ensure that patients are fully prepared in the preoperative and postoperative phases of the surgical journey. Pre-admission nurses in the surgical wellness clinic were in a unique position during the nurse-patient visit to provide consistent patient education that meets the needs of each patient preparing for a prostatectomy. The patients looked to the nurses for instruction and guidance while preparing for surgery, therefore the nurses' awareness of their current inconsistent delivery of education was important.

### **Project Interventions**

The interventions were guided by the need for comprehensive patient education related to the prostatectomy procedure and the desire to meet multiple learning styles of the patient population. To address the gap in pre-admission ERAS education for patients preparing to undergo prostate surgery, several interventions were designed. In collaboration with an interdisciplinary team, the project leader planned the following:

1. Develop a prostate surgery book for individuals undergoing prostatectomy ERAS surgery including:
  - a. Print copy of prostate surgery book
  - b. Prostate surgery digital book
  - c. Prostate book translated to Spanish.
2. Create a prostate surgery ERAS checklist for the patient with a concise list, ordering the preoperative activities.
3. Develop a nurse teaching tool with a grade-level appropriate script for the pre-admission nurses to deliver prostate ERAS patient education.

4. Design an in-service for the pre-admission nurses covering the created education component of prostate ERAS, followed by a survey evaluating the in-service material.
5. Pre-admission nurses to relay the patient education component during the teaching visit utilizing the education tools created.
6. Track the number of prostatectomy ERAS patients participating in pre-admission teaching visits, and the number of patients receiving the book including tracking of language and format (print vs digital).
7. Assess patient satisfaction with the ERAS teaching visit through a patient survey to be provided by the pre-admission nurse.

The creation of patient material that follows the plan of care recommended by the ERAS® Society in conjunction with input received from the urology surgeons, anesthesiology, and nursing was intended to guide the patients' knowledge and expectations while preparing to undergo prostate surgery. A standardized ERAS plan of care is to be used to manage the patient journey throughout the surgery continuum.

### ***Developing the Prostate Surgery Book***

The development of a prostate surgery book with an associated ERAS patient checklist was to be constructed using the urology ERAS® Society Guidelines and content contribution from the urology surgeons that perform prostate surgery at the designated facility. Starting with the organizations' standardized template, the project leader planned for the components of the prostatectomy ERAS pathway to be incorporated to create the document. The preliminary prostate surgery book would be reviewed by the patient education clinical specialist and the pre-admission nurses, before submission to the surgeons and anesthesiologists for feedback. This important collaboration led to valuable input from the multidisciplinary team resulting in group



acceptance of the final product. A quick response code, also known as a QR code, was to be placed throughout the book to augment the teaching. Codes were to be added to link educational videos on the topics of catheter care, chlorhexidine skin cleansing, pain management, wound care, and more.

The project lead incorporated the feedback received, then assessed the readability of the patient education material using the Flesch-Kincaid Grade Level Readability Tool with a goal of achieving material at the 5<sup>th</sup> to 8<sup>th</sup> grade reading level, as set by the organization. The Health Literacy Advisor (HLA) software was to be utilized to determine whether the appropriate health literacy level was applied to the material. The HLA software, available within the patient education department, uses several readability and grammar scales to apply plain language principles which may improve health-related understanding. Therefore, the project lead planned to work closely with the patient education clinical specialists to complete the health literacy review.

Once the written book was completed and sent to the printer for publishing, the digital book could be developed for patients who prefer a digital copy. Translation of the book to Spanish was planned after the English version was created and printed.

### ***Distribution of Prostate Surgery Book***

The initial supply of the printed prostate surgery books was to be ordered by the surgical wellness clinic after notification of availability. Then the department would monitor and maintain the subsequent print books to resupply the clinic. The organization has a process in place for ordering patient education material and this process was to be utilized to order prostate surgery printed books. Distributing the digital book was to be determined and assigned by the pre-admission nurse by using the EHR or through scanning a QR code, after which the patient

would access it through an application on a smart device.

### ***Nurse Teaching Tool***

The nurse teaching tool document for the pre-admission nurse was created then presented to the nurses virtually in a synchronous format using PowerPoint slides. It included the critical steps that the nurse should review with patients about the surgical process, as identified by the ERAS® Society Urology Guidelines and the multidisciplinary team at the organization. Once developed, the nurse teaching tool was to be sent to the printer for lamination as a two-sided document, which would make the tool durable and easy to disinfect. Images in the nurse teaching point document shall correspond to the topic images that appear in the prostate surgery patient education book. The teaching points guide was to be 20 to 24 pages, requiring approximately 20 minutes to review with each patient, leaving ten minutes of the visit for patient questions.

### ***Nurse In-Service***

The comprehensive patient education material for prostate surgery and the implementation is an addition to the overall surgical pre-admission process. The project leader planned to construct and present an in-service on the new materials and the implementation process for the nurses who would be teaching patients undergoing ERAS prostatectomy. It was planned for the in-service to be delivered during the surgical wellness clinic's team meeting. Additionally, during the nursing in-service, the prostate ERAS patient checklist was to be explained. After the in-service, the project leader planned to administer an anonymous paper survey to assess the nurse's response to the education material (see Appendix A). The anonymous survey would be completed immediately after the in-service and collected by the project leader.

### ***Administration of Surveys***

The patient and nurse surveys along with envelopes were attached to the print copy of the prostate surgery book. Before the patient leaves the clinic, the nurse was to hand the patient a survey. The patient and nurse each have a survey to complete after the pre-admission visit that evaluates the nurse's response to and the patient's satisfaction with the teaching visit and teaching material (see Appendix B and C). Once completed, the survey was to be placed in a self-sealing envelope provided by the project leader, then deposited by the nurse or patient in the envelope in a locked box. The project leader provided the locked box and placed it securely in the surgical wellness clinic; only the project leader had keys to the locked box. The project leader planned to collect the surveys in person four times during the implementation period from March 2021 to June 2021. At the end of the project, the locked box was removed from the surgical wellness clinic and the remaining blank surveys were collected and destroyed.

### ***Audit Delivery of Patient Education Material***

The pre-admission nurse was to ascertain patient preference for receipt of education material, then provide the material in print or digital format based on the patient response and availability. Auditing patient receipt of this educational material was to be performed through a question on the nurse after visit survey and patient after visit survey. Both surveys included a question about the format of the patient education material given to or received by the patient. There was also an option on the survey for the nurse and patient to comment if patient education material was not provided. See Appendix B and C for the respective surveys.

### **Strategic Plan**

The healthcare system where the project took place has several goals within the strategic plan including building partnerships, improving access to care, enhancing health equity, and

improving the quality of healthcare. A core objective of the strategic plan involves improving access to care, which has been demonstrated by the acquisition of multiple hospitals in the area, making it possible for more individuals to gain proximity to a hospital facility associated with the healthcare system. The organization's mission and vision include making healthcare remarkable including adding patient education material where there are gaps. This project further supports the healthcare system's strategic plan and mission to improve the health of our communities, one person at a time.

### **Stakeholders**

Registered nurses working in the patient education department are bachelor's, master's, and doctoral prepared. The nurses worked collaboratively with key stakeholders (surgeons, anesthesiologists, and the information technology department) and the preoperative admission department to develop and implement the pre-admission patient education component of the ERAS guidelines, including the print copy and digital format of a prostate surgery patient education book. The director of patient education supported the project, facilitated the creation of the materials, and assisted in setting up meetings with key stakeholders, such as the surgical services manager and representatives in the information technology department. It was important to collaborate with the anesthesiology group, and the surgeons so the education would be consistent with the pathway. Stakeholders along with associated roles are listed in Table 4.

### **Role of DNP**

The role of the Doctor of Nursing Practice (DNP) leader working with the interdisciplinary team is defined through the *Essentials of Doctoral Education for Advanced Nursing Practice* (American Association of Colleges of Nursing [AACN], 2006). *Essential II* concerns Organizational and Systems Leadership for Quality Improvement and Systems

**Table 4***Stakeholders*

Stakeholder	Role
Director of Patient and Clinical Education	Responsible for development of all corporate education; approves all education material.
Patient Education Clinical Specialist	Develops patient education material; facilitates communication with stakeholders.
Urology Surgeons	Provides input and feedback on education material to promote consistent messaging.
Anesthesiologists	Initiated prostate ERAS pathway for the organization; responsible for keeping it up to date.
Surgical Services Manager	Approves implementation of new department processes; arranges staff education on new processes.
Pre-Admission nurses	Reviews survey content; provides patient education using developed material.
Print vendor	Formats and prints completed version of education material.
Patient Education Manager	Responsible for facilitating storage on the shared drive.

Thinking. By reviewing the gap in the patient education delivered, the process of planning to ensure the quality of health care for the targeted population served helps to meet this essential. Excellence in practice was promoted by incorporating a new care delivery process that works with the current organizational structure. Working with the system as it functions now was an effective method to deliver the in-service to the nursing staff impacted by the change in the process. It involved critiquing research findings on the topic, applying the ERAS guidelines to the current prostate surgery practice, and translating the ERAS education guidance into practice

by creating tools for implementation. Knowledge dissemination, through the implementation of the education portion of the ERAS prostatectomy pathway, makes evidence-based practice and outcomes more reliable through standardized guidance.

Technology in healthcare is increasing and healthcare providers must learn more uses for available technology. *Essential IV*, Information Systems/Technology, Patient Care Technology for the Improvement and Transformation of Health Care (AACN, 2006) was met by working with a representative for information systems to obtain reports concerning historical prostate patient demographics and to formalize the print version of the prostate book. These reports were important to assess the need for change and to evaluate and report outcomes regarding the patient population and the project results. The reports received on the prostate surgery patients provided a clear understanding of the patient population and the overall assignment of ERAS for prostate surgery at the targeted facility.

Working collaboratively with the patient education team, the surgeons, and others to develop the teaching material is an example of *Essential VI*, Interprofessional Collaboration for Improving Patient and Population Health Outcomes (AACN, 2006). Working collaboratively with the team was vital to create a product that would be accepted by all stakeholders. Finally, evaluating the current ERAS pathway and comparing it with the ERAS® Society Guidelines allowed the project leader to meet *Essential VIII*, Advanced Nursing Practice (AACN, 2006). Meeting with stakeholders outside of the patient education department to develop and prepare for the implementation of the education program based on evidence-based guidelines for ERAS has been instrumental to this *Essential*. The project enhanced my overall practice knowledge from the master's to the doctoral level by participating with a complex health system to advance patient education and engage with other nursing professionals to promote nursing excellence

(Chism, 2019).

### **ERAS Guidelines**

Specific evidenced-based guidelines concerning surgery pathways were developed to decrease postoperative complications. These ERAS Guidelines are a series of evidence-based interventions utilized to optimize perioperative treatment (Ljungqvist, 2020). Interventions included in the guideline include fasting, carbohydrate loading, patient education, bowel prep, pain management, fluid management, early oral nutrition, early mobilization, control of PONV, and other interventions as listed in Table 1. Enhanced Recovery After Surgery allows for more efficient care at a significantly lower cost (Xu et al., 2020), and with reduced length of stay when compared to non-ERAS pathways (Lv et al., 2020). A key element of the ERAS pathway implemented in this project involved patient education because patients need to have a clear understanding of what to expect and their role in preparation and recovery as they progress through the surgical journey.

### **Timeline**

The timeline for the project, as illustrated in Appendix D, outlines when each step was completed. The first three months comprised the assessment of the site followed by identification of gaps that may require intervention. Lack of comprehensive patient education material for patients undergoing prostate surgery was identified as an area of focus for the project. The project proposal was initiated with the project site Institutional Review Board (IRB) and the student's university IRB in March 2021. The intervention phase commenced in March 2021 and proceeded through June 11, 2021. Data collection, data analysis, and formative evaluation occurred concurrently with the intervention phase and were completed by the middle of June. The summative evaluation and review were completed at the end of June 2021.

**Evaluation Plan**

The Logic Model was used to formulate the evaluation plan by addressing each outcome objective (W.K. Kellogg Foundation, 2006). This model is organized to follow the progression from resources to interventions, to results, and outcomes (W.K. Kellogg Foundation, 2006). The project's progression from inputs to outcomes and impacts were evaluated and are outlined in detail in Table 5. The model added value to the project as it moved through each phase and helped to direct the evaluation by having a visual guide of the interventions and activities planned.

The inputs into the model consist of the established ERAS pathway for prostate surgery, along with literature for evidence-based education interventions. Other inputs are a timeline for the project, feedback from key stakeholders, and materials needed.

Activities during the project revolved around developing education materials for patients, including a prostate surgery book and an ERAS patient checklist (Appendix E). Instructions given to the pre-admission nurse along with patient teaching tools were intended to prepare the nurse to provide consistent education to each patient scheduled for prostatectomy. The introduction of the patient education material to the nurses was to be achieved through an in-service scheduled before the implementation of the project. A survey to be administered after the nursing in-service was created to assess the nurses' response to the patient education material (Appendix A). Surveys for patient satisfaction and nurse assessment of the teaching visit were to be administered to the patient and nurse respectively after each patient teaching visit (Appendix B & C). The nurse post in-service survey was intended to determine the experience level of the nurse and opinions about the new patient education material for patients undergoing an ERAS prostatectomy, and the nurse post-teaching visit survey was meant to identify the type of patient



**Table 5***The Logic Model Applied to ERAS Patient Education*

Inputs	Activities	Measures	Outcomes	Impact
ERAS Guidelines/ surgeons, anesthesia, & nursing input	Develop prostate patient education book/ digital version	Flesch- Kincaid readability level & Health Literacy	Complete prostate ERAS pathway bundle	Standardized prostate surgery patient education material
None	Planned translation to Spanish	Availability	Not translated, plan to complete in July 2021	Patients without option for education in Spanish
Evidence- based education	Create prostate ERAS checklist	Availability	Simplified instructions	Patients have a one-page document to follow
Evidence- based education	Create nurse teaching tool	Availability	Easy to follow teaching for nurse	Consistent patient education available
Newly developed education material	In-service introducing teaching material	Nurse survey	In-service delivered	Awareness of new format for education
Evidence- based education	Provide patient instruction and education material	Patient surveys	Patients rate satisfaction	Patient identifies level of satisfaction with nurse provided education
Evidence- based education	Nurse teaches patient and provides educational material	Nurse surveys	Nurse rating: time, guide, instruction, and teach- back	Consistent patient education

teaching material used (print copy or digital format), perceived sufficiency of time allotted for the teaching visit, time for patient questions, degree to which the teaching guide assisted the teaching, and effectiveness of patient teach-back. Patient response to the teaching was assessed through the survey administered to the patient after the teaching visit.

The project lead expected that the project would result in a comprehensive pre-operative prostate surgery patient education program with nurse and patient feedback regarding the process and the material. The overall impact of the project was intended to complete the implementation of the prostate surgery ERAS pathway bundle.

### **Reliability and Validity**

The project leader developed three surveys to assess patient and nurse perspectives regarding the ERAS prostate education material and teaching visit. The surveys included: the Nurse Survey: Post Prostate ERAS In-service, the Nurse Survey: Post Prostate ERAS Teaching Visit, and the Patient Survey: Post Prostate Surgery Teaching Visit (see Appendix A, B, and C). While satisfaction surveys were reviewed (Eubank et al, 2019; Huynh et al, 2014; Mitchell, 2017), they did not match the needs of this project but were used to guide the final surveys. Each survey was designed specifically for this project and contained multiple choice and Likert scale questions along with an option to provide comments. The Likert scale used in each survey included a midpoint on the response scale which enhances the reliability and validity of the instrument (Chyung et al., 2017).

To establish content validity of each survey, the surveys were created by the project lead, reviewed by the head of the patient education department, and the project advisor then revised based on their feedback. Research of other survey instruments measuring patient satisfaction and ideas were used to support developing the survey as well as input from individuals in the surgical

wellness clinic, the patient education director, and the project advisor.

***Nurse Survey: Post Prostate ERAS In-Service***

A post in-service nurse survey was developed to measure the nurses' perception of value of the teaching guide, the intent to use the patient education tools during the nurse-patient teaching visit, and the perceived benefit of attending the in-service. It consisted of four questions with the first question determining the years of nursing experience for each respondent. The other three questions to assess value, intent of use, and perceived benefits were created using a 5-point Likert scale with 1 denoting highly disagree and 5 indicating highly agree. The nurse survey was administered after the in-service that introduced the prostatectomy patient education tools.

***Nurse Survey: Post Prostate ERAS Teaching Visit***

The project lead developed a nurse survey for the post-patient teaching visit to identify the type of patient teaching material used (print copy or digital format), perceived sufficiency of time allotted for the teaching visit, time for patient questions, degree to which the teaching guide assisted the teaching, and effectiveness of patient teach-back. This survey was to be completed by the nurse following the pre-admission teaching visit with the patient. A total of six questions were contained in the survey, five of which were structured on a 5-point Likert scale with a range from 1 for highly disagree to 5 for highly agree. One question was in the multiple-choice format.

***Patient Survey: Post Prostate Surgery Teaching Visit***

The project lead developed the patient survey based on ideas combined from other tools, feedback from the pre-admission nurses, and information needed to evaluate patients' perceptions concerning the nurse-patient teaching visit. The Likert scale on the patient survey ranged from 1 for very unsatisfied to 5 for very satisfied. To establish the appropriate readability

of the 5<sup>th</sup> to 8<sup>th</sup> grade reading level, the patient survey was checked by applying the Flesch-Kincaid Grade Level Index.

### **Data Analysis Plan**

The expected volume of three patients per week was based on the number of patients typically scheduled for prostatectomy following the ERAS pathway. For the 10-week implementation period, it was projected that 30 patients might be educated on the prostatectomy ERAS pathway and therefore complete the patient survey. Likewise, there should be 30 nurse surveys after the patient teaching visit, although it was recognized that the same nurse might complete more than one post-visit teaching survey.

The surveys were to be collected from the implantation site periodically during the project and tallied. Descriptive statistics were to be used to calculate the mean as a percentage and the actual count for each of the Likert scale questions. Following the collection of each nurse survey for the post-prostate ERAS in-service, the data was to be reviewed for missing responses, then the responses were recorded in numeric form in an Excel spreadsheet. The parameters for the Excel spreadsheet were prepared in advance with each of the data points so that data could be entered efficiently. The means of each category were to be calculated after the basic numbers were entered into the spreadsheet.

A similar process would be utilized for analysis of the data collected for the nurse survey of the post prostate ERAS teaching visit. The data collection was planned periodically during the project and would be entered into an Excel spreadsheet prepared in advance.

Descriptive statistics (mean expressed as a percentage) were also to be used for the data collected from the patient survey of the post Prostate Surgery Teaching Visit. The Excel spreadsheets were to be created in advance of the implementation phase. Responses to questions

one through three would be described as the number and percentage of reported patient self-reported characteristics including language, age, and education level. Responses to questions four and five were to be reported as the number and percentage of patients who replied no or yes to the respective questions. Question five would be captured as the method of receiving the prostate surgery book, which then would be reported as the number and percentage of patients affirmatively responding to the respective modality. Responses to questions six to nine would be measured on a 5-point Likert scale, then the mean would be calculated as a percentage, then reported on an Excel spreadsheet along with the actual count for each of the Likert scale questions.

### **Protection of Human Subjects**

Protecting patients and their confidentiality were kept at the forefront of this quality improvement project. As required by the clinical site, the project lead initially submitted the proposal to the clinical site's Research Council and then received approval to submit it to the organization's Institutional Review Board (IRB) without changes (see Appendix F). The organization's IRB deemed the project as non-research (Appendix G). Finally, the proposal was sent to the project leader's university IRB and was deemed as non-research (Appendix H). The project did not begin until all determinations were rendered.

The quality improvement project was not considered research and there was no known risk to the patient in this project. Personal data such as patient name, employee name, date of birth, or medical record numbers were not collected on the evaluation surveys which were submitted anonymously. The patient and nurse respectively placed the post-visit surveys in the locked collection box placed in a secure location at the nursing desk within the clinic. Although this evidence-based quality improvement project did not require participant consent, implied

consent was attached to the top of each survey.

### **Results**

Interventions proposed to achieve the project objectives were guided by the ERAS® Society Guidelines for urology procedures, organizational standards, and evidence-based education. The prostate surgery education book was created by the project lead with contributions from stakeholders including the pre-admission nurses, then approved by the director of clinical patient education. Once the book was published and printed, a digital book matching the print book content was produced. A checklist created for prostate patients incorporated the steps of the ERAS prostate pathway and the traditional preoperative care. Once created the checklist was saved in the shared drive by the patient education department.

Next, the nurse teaching tool was developed to guide patient education during the pre-admission visit with the nurse; it follows the instructions and order of interventions in the book. Lastly, the prostatectomy ERAS education materials were ordered by the surgical wellness clinic, and an in-service to introduce the material was presented to the pre-admission nurses. All patient education was received in the unit one week before the in-service and was ready for use after the in-service was completed.

Overall results of the quality improvement process assessed using formative and summative evaluation showed that the objectives of the project were met. Specifically, the prostate patient education along with the nurse teaching tool was created, the education material was introduced to the nurses, and the pre-admission nurses began using the teaching tool to educate the patients. The summary of the outcome assessment is listed in Table 6.

### **Survey Results**

Implementation took place over 10-weeks from March 2021 to June 2021. Twenty-two

**Table 6***Formative and Summative Evaluation*

Formative	Goal Met	Summative	Goal Met
Create patient education book for prostate surgery	Completed November 2020	Provide education material to patients	March 2021 and ongoing
Prostate ERAS patient checklist constructed	Completed November 2020	Checklist used to augment teaching	March 2021 and ongoing
Creation of Spanish version of book	Pending evaluation	Need/Cost evaluation completed	Pending evaluation
Nurse teaching tool to augment learning	Completed December 2020	Share consistent education with patients	Began use in April 2021
In-service for nurses	Presented March 2021	Introduce education material	Completed March 2021
Patient teaching visit with prostate education material	Began March 2021	Educate patients on ERAS pathway	Began March 2021 and ongoing
Patient survey to elicit feedback	Completed January 2021	Positive patient satisfaction scores	Surveys initiated in March 2021
Nurse survey to elicit intention to use education material	Completed January 2021	Nurse rate use of teaching tool to guide visit	Survey evaluation complete June 2021

patients completed the patient survey after the teaching visit and the project lead collected 22 nurse survey post-teaching visits from the locked box.

***Nurse Survey: Post Prostate ERAS In-Service***

All pre-admission nurses assigned to the surgical services department met inclusion criteria to attend the in-service conducted by the project lead because each nurse provides pre-admission education for all surgery types. The purpose of the virtual in-service presented through

Zoom was to introduce the prostate patient education tools to the nurses and reinforce the topics needed by the prostate surgery patients. The project leader anticipated that 90% of the surgical wellness clinic nurses would attend the in-service delivered during the staff meeting. Nine of 14 nurses (64%) assigned to the surgical wellness clinic at the targeted hospital attended the in-service conducted by the project lead and each of the nine nurses completed the anonymous survey. The nurses submitted their survey by placing it in the locked box located at the nursing desk within the surgical wellness clinic. The in-service was recorded by the surgical services manager and made available for the nurses who did not attend the virtual in-service; however, it is not known if the nurses reviewed the in-service, and no additional surveys were submitted beyond the initial nine received.

Among nurses who completed the survey, 88.9% ( $n = 8$ ) responded that they agreed or highly agreed that the prostate surgery teaching guide would add value, while 11.1% ( $n = 1$ ) rated this category as neutral. Concerning use of the teaching guide, 77.7% ( $n = 7$ ) responded that they agreed or highly agreed that they plan to use the teaching guide, and 11.1% ( $n = 1$ ) of nurses rated it as neutral. One nurse did not respond to this question. Regarding the benefit of the in-service, 100% of the nurses who attended the in-service agreed or highly agreed that the in-service was beneficial. Findings from the nurse post-in-service are listed in Table 7.

#### ***Nurse Survey: Post Prostate ERAS Teaching Visit***

Nurses completed a post teaching visit survey after providing the educational services for each patient scheduled to have a prostatectomy following the ERAS pathway. Twenty-two surveys were completed and submitted in the locked box. The results indicated that 100% of the nurses provided direction to the patient to bring the teaching material to each visit related to the surgery. The nurse survey results showed that 21 patients received the print book, and one



received both the print and digital copy.

**Table 7**

*Nurse Survey: Post Prostate ERAS In-service*

Questions	<i>N</i> = 9
	<i>n</i> (%)
Years of nursing exp <sup>1</sup>	
0 to 9 years	0
10 to 19 years	5 (55.6)
≥ 20 years	3 (33.3)
Teaching guide value	
Highly disagree	0
Disagree	0
Neutral	1 (11.1)
Agree	3 (33.3)
Highly agree	5 (55.6)
Plan to use teaching <sup>1</sup>	
Highly disagree	0
Disagree	0
Neutral	1 (11.1)
Agree	3 (33.3)
Highly agree	4 (44.4)
Beneficial in-service	
Highly disagree	0
Disagree	0
Neutral	0
Agree	3 (33.3)
Highly agree	6 (66.7)

*Note:* <sup>1</sup>Indicates a missing response

It was noted that 95.5% ( $n = 20$ ) of the completed nurse surveys indicated agree or highly agree concerning having adequate time for the teaching visit while one visit was rate as highly disagree. Similarly, regarding the statement “the prostate surgery teaching guide assisted in directing the education portion of the visit”, one survey response specified highly disagree. One rated this statement as neutral and the remaining 90.9% of the responses were rated as agree or highly agree. A total of 95.4% ( $n = 20$ ) of nurse survey responses indicated agree or highly agree

that there was adequate time for the patient questions whereas one response specified highly disagree.

The next question on the nurse survey for the post-teaching visit was added based on the needs of the organization for the patient to bring their patient education book to each visit relating to the surgery and 90.9% ( $n = 19$ ) of responses indicated agree or highly agree that this action was taken during the visit. Nine percent ( $n = 2$ ) indicated disagree or highly disagree with this action. The final question relating to the effectiveness of teach-back of the chlorhexidine wash and carbohydrate drink was rated as agree or highly agree by 95.5% ( $n = 20$ ) of the nurses and only 4.5% ( $n = 1$ ) indicated highly disagree. See Table 8 for a summary of the post-visit nurse survey results.

#### ***Patient Survey: Post Prostate Surgery Teaching Visit***

A total of 22 patients were scheduled for prostate surgery following the ERAS pathway during the implementation phase of the project; 100% attended the pre-admission teaching visit, participated in the prostatectomy education, and completed the patient post-visit teaching survey. All patients choose English as their preferred language, more than 68% were age 60 or over, and 86.4% attended or graduated college. See Table 9 for a summary of this data.

Among the 22 patient post-visit teaching surveys, 100% of the patients confirmed receipt of the printed ERAS prostate teaching book. In contrast, the results of the nurse post-visit survey indicated that 21 of the 22 patients (95.5%) received the print book and one person received the digital format along with the print book. Only 18.2% ( $n = 4$ ) of the patients had heard about ERAS before the teaching visit even though the surgeon should have discussed this pathway during the doctor-patient treatment consultation. Interestingly, 63.6% ( $n = 14$ ) of patients reported that they would bring the ERAS patient education book with them to each visit about

**Table 8***Nurse Survey: Post Prostate ERAS Teaching Visit*

Questions	<i>N</i> = 22
	<i>n</i> (%)
Book version	
Print	21 (95.5)
Digital	0
Both	1 (4.5)
None	0
Adequate time	
Highly disagree	1 (4.5)
Disagree	0
Neutral	0
Agree	8 (36.4)
Highly agree	13 (59.1)
Teaching guide directed visit	
Highly disagree	1 (4.5)
Disagree	0
Neutral	1 (4.5)
Agree	6 (27.3)
Highly agree	14 (63.6)
Time for patient questions	
Highly disagree	1 (4.5)
Disagree	0
Neutral	0
Agree	5 (22.7)
Highly agree	16 (72.7)
Instructed to bring book	
Highly disagree	1 (4.5)
Disagree	1 (4.5)
Neutral	0
Agree	3 (13.6)
Highly agree	17 (77.3)
Teach-back	
Highly disagree	1 (4.5)
Disagree	0
Neutral	0
Agree	4 (18.2)
Highly agree	17 (77.3)

**Table 9***Patient Post-Teaching Survey: Patient Characteristics*

Characteristics	<i>N</i> = 22
	<i>n</i> (%)
Language preferred	
English	22 (100)
Spanish	0
Age (years)	
49 and under	3 (13.6)
50-59	4 (18.2)
60-69	13 (59.1)
70 or over	2 (9.1)
Education	
Elementary or less	1 (4.5)
Some high school or graduate	2 (9.1)
Some college or graduate	19 (86.4)

**Table 10***Patient Post-Teaching Survey: General Questions*

Questions	<i>N</i> = 22
	<i>n</i> (%)
Heard About ERAS	
Yes	4 (18.2)
No	18 (81.8)
Copy of book	
Paper	22 (100)
Digital	0
Both	0
None	0
Bring book	
Yes	14 (63.6)
No	1 (4.5)
No response	7 (31.8)

the surgery, one reported that they would not, and 31.8% ( $n = 7$ ) did not answer the question (see Table 10).

A total of 77.3% ( $n = 17$ ) of patients completed the question about overall satisfaction and 100% of those rated the visit with the nurse as highly satisfied or satisfied. Time with the nurse and ability to ask questions was rated as very satisfied by 100% of patients completing the survey. See Table 11 for a summation of the patient response data.

**Table 11**

*Patient Post-Teaching Survey: Satisfaction Questions*

Satisfaction Questions	$N = 22$
	$n$ (%)
Clear instructions	
Very unsatisfied	0
Unsatisfied	0
Neutral	0
Satisfied	2 (9.1)
Very satisfied	15 (68.2)
No response	5 (22.7)
Ability to ask questions	
Very unsatisfied	0
Unsatisfied	0
Neutral	0
Satisfied	0
Very satisfied	17 (77.3)
No response	5 (22.7)
Time with nurse	
Very unsatisfied	0
Unsatisfied	0
Neutral	0
Satisfied	0
Very satisfied	17 (77.3)
No response	5 (22.7)
Overall satisfaction	
Very unsatisfied	0
Unsatisfied	0
Neutral	0
Satisfied	1 (4.5)
Very satisfied	16 (72.7)
No response	5 (22.7)

### **Discussion**

Several objectives were proposed for inclusion in this quality improvement project. First, the prostate surgery book was developed, printed, and converted to digital format, although the Spanish version of the book in print was delayed pending an analysis of need. Second, a nurse teaching tool was developed to allow for consistent delivery of patient education. This was followed by a survey to evaluate the nurses' intention to use the material. Next, the pre-admission nurses were educated on the tools created, then finally a survey was administered to the nurse and patient after the teaching visit.

The patient education material was created following the established guidelines at the organization. There are standards in place for font size, font style, colors, and pictures, which were all followed, through working with the patient education clinical specialist. The book was to be created with pages for notes and the printing is completed in multiples of four. Once complete, the book was 40-pages, so the notes page was added to the inside back cover instead of adding additional pages, which would have increased the cost per book. Once the book was created and sent to the printer, the QR code could be created to link to the digital version of the prostate surgery book. It was planned for the book to be translated to Spanish, but the process was delayed pending evaluation of need. At the time of project completion, the plan was to send the book for translation within a few weeks.

A nurse teaching guide was developed to assist the nurses with delivering consistent education. It contained language and images that were the same as in the book, as well as talking points for each page of the guide. The in-service for the pre-admission nurses was completed during a regularly scheduled staff meeting and not all the nurses assigned to the unit were in attendance. This may indicate that some nurses who provide the patient education have not been

updated on the new education process for prostatectomy patients who follow the ERAS pathway. The post-in-service survey results revealed that all nurses assigned to the surgical wellness clinic who attended the in-service have at least 10-years of experience as a nurse. Interestingly, most of the nurses indicated that the teaching guide would add value or that they planned to use the tool, and that the nurses completing the survey felt that the in-service was beneficial.

Following the implementation of the project, positive satisfaction results were noted on the surveys. The patient education book and the nurse teaching are achieving the intended purpose of delivering pre-admission ERAS education to patients as evidenced by the surveys showing all patients receiving the prostate book. It was noted that one nurse reported highly disagree on the questions relating to adequate time, teaching guide directing the visit, time for patient questions, instructing the patient to bring the book to future visits, and the use of teach-back. It was unclear if the nurse meant to rate these questions negatively or if there was a misunderstanding of the survey responses as no additional comments were noted on the survey. According to the survey results, most of the pre-admission nurses are also educating the patients on bringing their book to each of their appointment related to their surgery. This was an important part of the project for the organization because the education in the book is used to guide patient care throughout the surgical journey.

It was noted from the survey that most patients were unaware of the ERAS pathway once they arrived for the pre-admission nurse visit. The surgeons decide on the pathway to be followed for the surgery, then they provide the initial explanation of the ERAS process using the brief ERAS pamphlet as a guide. The process followed by the surgeon's office was not part of this project; therefore, it is not known why the patients were unfamiliar with the ERAS pathway upon arrival for the pre-admission visit. It would be beneficial to follow up with the surgeon's

office to share the outcome of the project which may lead to improved ERAS education to the patients in the surgeon's office.

### **Limitations**

The initial patient surveys were retrieved one week after implementation, and it was noted that a few patients did not complete the back of the form. Initially, the patient survey was printed on two pages which may account for why some patients did not answer the questions located on the second page. After reviewing four patient surveys, the survey was reformatted and printed to keep all questions on one side. The reformatted surveys were delivered to the implementation site at the beginning of the third week.

A second limitation pertains to the use of the prostate surgery patient education books for patients undergoing a prostatectomy that was not guided by the ERAS pathway. The prostate surgery patient education books were delivered to both ERAS and non-ERAS patients; however, the surveys attached to the books given to the non-ERAS patients were discarded. This is a limitation because there was a risk of non-ERAS patients and the pre-admission nurse completing the surveys meant for the ERAS pathway patient and nurse. However, the project leader made sure that the pre-admission nurses were aware of the project and were not to administer the survey to the non-ERAS patients. Separating the books with the survey may have been more effective for this process.

The third limitation was related to interpreting patient satisfaction based on the surveys. The surveys used were created specifically for this project and while the project intended to capture patient perception of satisfaction with the education component, it cannot be guaranteed that construct was assessed. Additionally, patients who completed the survey at the clinic following their teaching session, patients may have felt the need to respond in a socially



desirable manner.

The prostate checklist was not included in the surgery book; this constitutes the fourth limitation. A decision was made by the organization to create the prostate surgery book for all patients undergoing prostatectomy, whether the surgery was guided by the ERAS pathway or not. The ERAS interventions are included in the prostate surgery book but were not part of a comprehensive checklist. However, a separate comprehensive ERAS checklist was created and made available on the hospital systems shared documents site. This allows the nurse access to the comprehensive list which provides direction for the patients assigned to the ERAS pathway. The nurses initiate the patient checklist but do not add patient-specific notes, such as time of intervention, to the patient's book during the visit. Adding specific notes to the checklist may be beneficial in assisting the patient to remember when to stop eating, stop drinking, take their chlorhexidine shower, or when to consume the carbohydrate drinks.

Finally, the volume of prostate surgery patients scheduled within the organization was used to determine the number of books to print, and a total of 200 were requested for printing. Based on the volume of books printed, the cost of the prostate surgery education book was found to be \$9.13 each. This was three times higher than originally thought since the original cost was based on the higher volume of cardiac books printed and may lead to an underordering of books.

### **Sustainability**

Project sustainability beyond the time that the DNP project leader is present becomes paramount to improve evidence-based practices over the long term. The project leader addressed several issues to promote project sustainability. Currently, there is a process in place in the surgical wellness clinic to order and keep patient education material stocked. The Administrative Specialist at the clinic is responsible for ordering the patient education books and this process

will continue. The patient education clinical specialists are responsible for requesting patient education material from the printer and making sure stock is available for distribution to the clinics when requested. It is necessary to track the number of scheduled surgeries and compare it to the number of books required on-site. The books are kept off-site until ordered, then the books must be shipped to the clinic. An order form was created by the project leader to include the number of surgeries in one column, the lead time to receive the books, and the number of books on hand. These values are used to calculate the number of books to be ordered. This process is intended to sustain the supply of books needed in the surgical wellness clinic for patient teaching. The patient education department will be responsible for updating any content as needed.

Fortunately, the 30-minute in-person teaching visit was a part of the pre-surgery structure prior to creating the prostate surgery book. Therefore, the nurses at the surgical wellness clinic will continue to conduct a 30-minute in-person teaching visit with the patient using the new educational materials developed in this project. This is part of the current pre-admission process and was not added for this project. Therefore, the sustainability of the nurse-patient teaching visit is secure.

### **Implications**

The versatility and roles of the DNP leader were demonstrated by working within a series of microsystems to complete a comprehensive patient education component for a prostate ERAS pathway, educate the nurses who will deliver the patient education, and evaluate nurse and patient responses to the changes. The end result led to a more standardized patient education process and the translation of evidence into practice, which is a key role of the DNP leader. Short-term implications for the completed project include consistent nurse-patient teaching, a

comprehensive patient-oriented teaching book, and the continuation of the face-to-face teaching visit. The organization values and supports in-person teaching and has been committing 30-minutes to this effort before the project took place. The DNP leader's skills in developing the project have long-term implications of promoting change and improving the quality of care through creating standardized patient education. The role of the DNP nurse leader in developing this project promoted excellence in practice by incorporating a patient education delivery process that works with the current organizational structure. Working collaboratively with the multidisciplinary health team along with processes currently in place was an effective method to deliver additional patient educational material to the nursing staff impacted by the change in the process.

It is important to sustain the teaching developed in this project so that the patients continue to receive consistent pre-admission prostate ERAS education. The project included measures developed to improve inventorying current stock, ordering the patient education books for inventory, and projecting the number of books to order. It is important to sustain this process to continue to provide remarkable care to the patients.

Literature supports the use of multimodal education approaches for providing education to patients during the preoperative period (Helms, 2020). Completing a comprehensive patient education component for a prostate ERAS pathway can lead to pre-admission nurses delivering consistent education to patients preparing to undergo prostatectomy surgery. Meeting with stakeholders outside of the patient education department to develop and prepare for the implementation of the education program was instrumental in creating the education component of the prostate ERAS pathway. Creating positive change and providing the tools needed to care for patients is at the core of nursing and the DNP degree expands on this assertion. The

development of DNP skills in leadership to fully implement an ERAS pathway was instrumental in capturing the essence of the DNP program.

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## Appendix A

### Nurse Survey: Post Prostate ERAS In-service

You are invited to participate in a quality improvement project. The purpose of the project is to create and assess patient teaching material. You have been selected to complete the survey based on your involvement with the prostate surgery process. Completing the survey will take about 5-10 minutes. No personal information will be collected.

By completing the survey, you consent to your responses being used in data analysis. Answering the survey questions is voluntary, and you can refuse to answer any of the questions. If you have any questions about this project, please contact the project lead at [vcotton@student.uiwtx.edu](mailto:vcotton@student.uiwtx.edu).

1. How many years of nursing experience do you have?

- a. 0 to 9 years
- b. 10 to 19 years
- c.  $\geq 20$  years

2. The Prostate Surgery teaching guide will add value.

Highly Disagree	Disagree	Neutral	Agree	Highly Agree
1	2	3	4	5

3. I plan to use the prostate surgery teaching guide.

Highly Disagree	Disagree	Neutral	Agree	Highly Agree
1	2	3	4	5

4. The in-service on the prostate surgery teaching material was beneficial.

Highly Disagree	Disagree	Neutral	Agree	Highly Agree
1	2	3	4	5

**Comments:**

## Appendix B

### Nurse Survey: Post Prostate ERAS Teaching Visit

You are invited to participate in a quality improvement project. The purpose of the project is to create and assess patient teaching material. You have been selected to complete the survey based on your involvement with the prostate surgery process. Completing the survey will take about 5-10 minutes. No personal information will be collected. By completing the survey, you consent to your responses being used in data analysis. Answering the survey questions is voluntary, and you can refuse to answer any of the questions. If you have any questions about this project, please contact the project lead at [vcotton@student.uiwtx.edu](mailto:vcotton@student.uiwtx.edu).

1. Which version of the Prostate Surgery book did you provide?

- a. Printed book
- b. Digital book
- c. Both
- d. None, reason \_\_\_\_\_

2. The scheduled time was adequate for this prostate surgery patient visit.

Highly Disagree	Disagree	Neutral	Agree	Highly Agree
1	2	3	4	5

3. The Prostate Surgery teaching guide assisted in directing the education portion of the visit.

Highly Disagree	Disagree	Neutral	Agree	Highly Agree
1	2	3	4	5

4. Time was available during the visit for the patient to ask questions.

Highly Disagree	Disagree	Neutral	Agree	Highly Agree
1	2	3	4	5

5. The patient was instructed to bring the Prostate Surgery book to each visit related to surgery.

Highly Disagree	Disagree	Neutral	Agree	Highly Agree
1	2	3	4	5

6. Teach-back was effective with the patient (chlorhexidine shower & carbohydrate drink).

Highly Disagree	Disagree	Neutral	Agree	Highly Agree
1	2	3	4	5

**Comments:**

## Appendix C

### Patient Survey: Post Prostate Surgery Teaching Visit

You are invited to participate in a quality improvement project. The purpose of the project is to create and assess patient teaching material. You have been selected to complete the survey based on your involvement with the prostate surgery process. Completing the survey will take about 5-10 minutes. No personal information will be collected. By completing the survey, you consent to your responses being used in data analysis. Answering the survey questions is voluntary, and you can refuse to answer any questions. If you have any questions about this project, please contact the project lead at [vcotton@student.uiwtx.edu](mailto:vcotton@student.uiwtx.edu).

1. Preferred language
  - a. English
  - b. Spanish
  - c. Other \_\_\_\_\_
2. Age (years)
  - a. 49 or under
  - b. 50-59
  - c. 60-69
  - d. 70 or above
3. Education
  - a. Elementary or less
  - b. Some high school or graduate
  - c. Some college or graduate
4. Have you heard about Enhanced Recovery After Surgery (ERAS) before today?
  - a. Yes
  - b. No
5. Did you receive a copy of the prostate surgery book?
  - a. Paper book
  - b. Digital book
  - c. Both
  - d. None

**Answer this section about the teaching visit with the nurse:**

Please rate your satisfaction in the following areas.

6. The instructions about my surgery were clear.

Very Unsatisfied <b>1</b>	Unsatisfied <b>2</b>	Neutral <b>3</b>	Satisfied <b>4</b>	Very Satisfied <b>5</b>
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7. Ability to ask questions about the surgery process.

Very Unsatisfied <b>1</b>	Unsatisfied <b>2</b>	Neutral <b>3</b>	Satisfied <b>4</b>	Very Satisfied <b>5</b>
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8. The time spent with the nurse.

Very Unsatisfied <b>1</b>	Unsatisfied <b>2</b>	Neutral <b>3</b>	Satisfied <b>4</b>	Very Satisfied <b>5</b>
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9. Overall, how satisfied are you with the teaching visit?

Very Unsatisfied <b>1</b>	Unsatisfied <b>2</b>	Neutral <b>3</b>	Satisfied <b>4</b>	Very Satisfied <b>5</b>
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**Appendix C**

**Patient Survey: Post Prostate Surgery Teaching Visit**

10. I will bring my teaching material to each visit about my surgery.

- a. Yes                      b. No

**Comments:**

## Appendix D

## Project Timeline

Activity		Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21
Assessment	Site assessment	X	X	X									
	Preceptor approval	X	X	X	X	X	X	X	X	X	X	X	X
	Review teaching material			X	X	X							
	Identify project			X									
Planning	Obtain surgeon input				X								
	Obtain anesthesia input				X								
	Create education content			X	X								
	Create ERAS checklist				X								
	Create prostate book				X								
	Observe pre-admission nurses					X							
	Construct nurse teaching guide					X	X	X	X				
	Develop nurse surveys					X	X						
	Develop patient survey					X	X						
	Prostate book to printer					X							
Human Protection	CITI Training				X	X							
	Submit - UIW RNC					X							
	Approved - UIW RNC					X							
	Present - Site RC							X					
	Approved - Site RC							X					
	Submit - Site IRB							X					
	Approved - Site IRB								X				
	Submit - UIW IRB								X				
	Approved - UIW IRB								X				
	Close Site IRB												X

## Appendix D

## Project Timeline

[illegible]



## Appendix E

## Prostate Surgery ERAS Checklist

## Prostate Surgery ERAS Checklist

Surgery Date and Arrival Time (Please Arrive on time to the hospital)	
Evening Before and Day of Surgery	
	Stop eating any solid food as directed by your healthcare team.
	You may drink clear liquids up until 2 to 3 hours before your scheduled surgery time.
	Shower with Chlorhexidine soap.
Date and time of 1 <sup>st</sup> shower:	Date and time of 2 <sup>nd</sup> shower:
	Drink chilled complex carbohydrate drink. <ul style="list-style-type: none"> <li>○ Drink the 1<sup>st</sup> bottle the night before surgery.</li> <li>○ Drink the 2<sup>nd</sup> bottle over 5 to 10 minutes 1 hour before leaving for the hospital.</li> </ul>
Date and time of 1 <sup>st</sup> drink:	Date and time of 2 <sup>nd</sup> drink:
What to Bring to the Hospital	
	Your most up to date list or bottles of your meds, herbals, vitamins and supplements. <ul style="list-style-type: none"> <li>○ Mark each that have been stopped and when you stopped taking them.</li> </ul>
	Driver's license or photo ID, insurance card, Medicare or Medicaid card, and any co-pay.
	Copy of your advance healthcare directive and/or Living Will.
	Cell phone and charger. (Label with your name and return address)
	Important telephone numbers (include person taking you home).
	Clean, loose fitting clothes <ul style="list-style-type: none"> <li>○ Loose pajamas or short nightgown and short robe</li> <li>○ Loose shorts, jogging suit, sweats, and tops</li> <li>○ Socks and underwear</li> </ul>
	Slippers with backs and rubberized sole or walking sneakers/shoes
	Personal items such as: Toothbrush, toothpaste, deodorant, electric razor, comb, no powders
	CPAP or BiPAP machine, settings, tubing and machine, if you use one. Label with your name and return address.
	Glasses with case, if you use them. Label with your name and return address.
	Hearing aid with case and batteries, if you use them. Label with your name and return address.
	Container for dentures, if you have them. Label with your name and return address.
	This Booklet – <i>Your Guide to Prostate Surgery</i>
What to Leave at Home	
	Any item of value
	Jewelry
	Cigarettes and nicotine products
	Alcohol
	Home meds unless otherwise told
Arrange for:	
	A responsible adult to help you after surgery
	Someone to drive you home and to appointments
	Help with activities in the home (housework, laundry, meal prep, and pet care)

**\*This Prostate Surgery ERAS Checklist may not be reproduced or copied without consent.**

**Appendix F**  
**Research Council Approval Letter**




Name: Vanessa Cotton, MSN, RN

Facility: 

February 19, 2021

Dear Vanessa,

Thank you for submitting your evidence-based practice proposal, "Pre-admission Patient Education for a Prostatectomy Enhanced Recovery after Surgery Protocol" to the Nursing Research Council for approval.

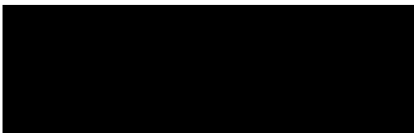
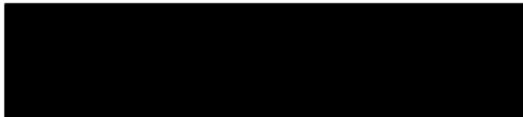
Your project was approved as a sound project with the potential to improve care at . The Nursing Research Council recommended the following changes to strengthen your study:

- None

Your completed project will be eligible for inclusion in career ladder portfolios for eligible nurses. The final report must be submitted back to the Nursing Research Council prior to Career Ladder submission.

We look forward to hearing back from you within the year.

Best wishes!



**Appendix G****Clinical Site IRB Approval Letter**

[REDACTED]

[REDACTED]

**DATE:** February 25, 2021  
**TO:** Vanessa Cotton, MSN, Other  
**FROM:** [REDACTED]  
**PROTOCOL TITLE:** Pre-admission Patient Education for a Prostatectomy Enhanced Recovery After Surgery Protocol  
**PROTOCOL NUMBER:** 21-1702  
Approval Date: February 23, 2021

[REDACTED] Healthcare IRB, operated by [REDACTED] has reviewed the protocol entitled: Pre-admission Patient Education for a Prostatectomy Enhanced Recovery After Surgery Protocol. The IRB has determined that this project meets one or more criteria contained within 45 CFR 46.101(b) exempting the project from the requirements of continued review. You are free to conduct your study without further reporting to the IRB. In the event that you revise your study significantly, this revision must be submitted for review to ensure that the study continues to meet the federal guidelines for exemption from review.

**Attachments**  
Prostate Surveys

This exempt determination will be documented in the minutes of the March 18, 2021 IRB meeting. A copy of the protocol is maintained by the IRB office. All minutes and proceedings pertinent to this protocol are maintained by the IRB office. The [REDACTED] IRBs are registered with the Office of Human Research Protections (OHRP) and in compliance with the requirements of federal regulations 45 CFR 46, 21 CFR 50, 21 CFR 56 and internal policies as revised to date. If you have any questions or need additional information, please contact the IRB office at [REDACTED]

Sincerely,

[REDACTED]

[REDACTED]

Note: The study specific rationale provided by the investigator is sufficient to justify the waiver of Informed Consent and HIPAA authorization [45CFR164.512(i)(2)(ii)]. Exempt Category 2

## Appendix H

### UIW IRB Approval Letter



3/8/2021

Project Lead: Vanessa Cotton

Project title: Pre-admission Patient Education for a Prostatectomy Enhanced Recovery After Surgery Pathway

Vanessa:

Your project titled Pre-admission Patient Education for a Prostatectomy Enhanced Recovery After Surgery Pathway was deemed to be **Not Regulated Research**.

Your proposed project was reviewed and found to not meet federal regulatory requirements for human subject research and does not require approval via the IRB process. Please use the IRB number **NRR [21-009]** when inquiring about or referencing this determination.

No further review of the project as proposed is required. Should you determine at any point you wish to add additional elements to the project, please contact us before initiating those components, as this may impact the determination.

For information regarding the IRB or the review process, please contact me at (210) 805-5885.

Sincerely,

**Ana Hagendorf, PhD, CPRA**

Ana Hagendorf, PhD, CPRA  
Director, Office of Research and Sponsored Projects Operations  
Office of Research and Graduate Studies  
University of the Incarnate Word  
4301 Broadway, CPO 1216  
San Antonio, Texas 78209  
(210) 805-3036  
[wandless@uiwtx.edu](mailto:wandless@uiwtx.edu)

**Appendix I****Abbreviations**

AACN	American Association of Colleges of Nursing
DNP	Doctor of Nursing Practice
DVT	Deep Vein Thrombosis
EHR	Electronic Health Record
ERAS	Enhanced Recovery After Surgery
GYN	Gynecology
HLA	Health Literacy Advisor
IRB	Institutional Review Board
IV	Intravenous
PONV	Postoperative Nausea and Vomiting
RALP	Robotic Assisted Laparoscopic Prostatectomy
SWOT	Strengths, Weakness, Opportunities, Threats
UIW	University of the Incarnate Word